AMENDATORY SECTION (Amending WSR 05-03-093, filed 1/18/05, effective 3/1/05)

WAC 296-62-07540 Formaldehyde.

Note: The requirements in this chapter apply only to agriculture. The general industry requirements relating to formaldehyde have been moved to chapter 296-856 WAC, Formaldehyde.

(1) Scope and application. This standard applies to all occupational exposures to formaldehyde, i.e., from formaldehyde gas, its solutions, and materials that release formaldehyde.

(2) Definitions. For purposes of this standard, the following definitions shall apply:

(a) "Action level" means a concentration of 0.5 part formaldehyde per million parts of air (0.5 ppm) calculated as an 8-hour time-weighted average (TWA) concentration.

(b) "Approved" means approved by the director of the department of labor and industries or his/her authorized representative: Provided, however, That should a provision of this chapter state that approval by an agency or organization other than the department of labor and industries is required, such as Underwriters' Laboratories or the Mine Safety and Health Administration and the National Institute for Occupational Safety and Health, the provision of WAC 296-800-370 shall apply.

(c) "Authorized person" means any person required by work duties to be present in regulated work areas, or authorized to do so by the employer, by this section of the standard, or by the WISHA Act.

(d) "Director" means the director of the department of labor and industries, or his/her designated representative.

(e) "Emergency" is any occurrence, such as but not limited to equipment failure, rupture of containers, or failure of control equipment that results in an uncontrolled release of a significant amount of formaldehyde.

(f) "Employee exposure" means the exposure to airborne formaldehyde which would occur without corrections for protection provided by any respirator that is in use.

(g) "Formaldehyde" means the chemical substance, HCHO, Chemical Abstracts Service Registry No. 50-00-0.

(3) Permissible exposure limit (PEL).

(a) TWA: The employer shall assure that no employee is exposed to an airborne concentration of formaldehyde which exceeds 0.75 part formaldehyde per million parts of air as an 8-hour TWA.

(b) Short term exposure limit (STEL): The employer shall assure that no employee is exposed to an airborne concentration of formaldehyde which exceeds two parts formaldehyde per million

parts of air (2 ppm) as a fifteen-minute STEL.

(4) Exposure monitoring.

(a) General.

(i) Each employer who has a workplace covered by this standard shall monitor employees to determine their exposure to formaldehyde.

(ii) Exception. Where the employer documents, using objective data, that the presence of formaldehyde or formaldehyde-releasing products in the workplace cannot result in airborne concentrations of formaldehyde that would cause any employee to be exposed at or above the action level or the STEL under foreseeable conditions of use, the employer will not be required to measure employee exposure to formaldehyde.

(iii) When an employee's exposure is determined from representative sampling, the measurements used shall be representative of the employee's full shift or short-term exposure to formaldehyde, as appropriate.

(iv) Representative samples for each job classification in each work area shall be taken for each shift unless the employer can document with objective data that exposure levels for a given job classification are equivalent for different workshifts.

(b) Initial monitoring. The employer shall identify all employees who may be exposed at or above the action level or at or above the STEL and accurately determine the exposure of each employee so identified.

(i) Unless the employer chooses to measure the exposure of each employee potentially exposed to formaldehyde, the employer shall develop a representative sampling strategy and measure sufficient exposures within each job classification for each workshift to correctly characterize and not underestimate the exposure of any employee within each exposure group.

(ii) The initial monitoring process shall be repeated each time there is a change in production, equipment, process, personnel, or control measures which may result in new or additional exposure to formaldehyde.

(iii) If the employer receives reports or signs or symptoms of respiratory or dermal conditions associated with formaldehyde exposure, the employer shall promptly monitor the affected employee's exposure.

(c) Periodic monitoring.

(i) The employer shall periodically measure and accurately determine exposure to formaldehyde for employees shown by the initial monitoring to be exposed at or above the action level or at or above the STEL.

(ii) If the last monitoring results reveal employee exposure at or above the action level, the employer shall repeat monitoring of the employees at least every six months.

(iii) If the last monitoring results reveal employee

exposure at or above the STEL, the employer shall repeat monitoring of the employees at least once a year under worst conditions.

(d) Termination of monitoring. The employer may discontinue periodic monitoring for employees if results from two consecutive sampling periods taken at least seven days apart show that employee exposure is below the action level and the STEL. The results must be statistically representative and consistent with the employer's knowledge of the job and work operation.

(e) Accuracy of monitoring. Monitoring shall be accurate, at the ninety-five percent confidence level, to within plus or minus twenty-five percent for airborne concentrations of formaldehyde at the TWA and the STEL and to within plus or minus thirty-five percent for airborne concentrations of formaldehyde at the action level.

(f) Employee notification of monitoring results. Within fifteen days of receiving the results of exposure monitoring conducted under this standard, the employer shall notify the affected employees of these results. Notification shall be in writing, either by distributing copies of the results to the employees or by posting the results. If the employee exposure is over either PEL, the employer shall develop and implement a written plan to reduce employee exposure to or below both PELs, and give written notice to employees. The written notice shall contain a description of the corrective action being taken by the employer to decrease exposure.

(g) Observation of monitoring.

(i) The employer shall provide affected employees or their designated representatives an opportunity to observe any monitoring of employee exposure to formaldehyde required by this standard.

(ii) When observation of the monitoring of employee exposure to formaldehyde requires entry into an area where the use of protective clothing or equipment is required, the employer shall provide the clothing and equipment to the observer, require the observer to use such clothing and equipment, and assure that the observer complies with all other applicable safety and health procedures.

(5) Regulated areas.

(a) The employer shall establish regulated areas where the concentration of airborne formaldehyde exceeds either the TWA or the STEL and post all entrances and accessways with signs bearing the following information:

DANGER
FORMALDEHYDE
IRRITANT AND POTENTIAL CANCER HAZARD
AUTHORIZED PERSONNEL ONLY

(b) The employer shall limit access to regulated areas to authorized persons who have been trained to recognize the

hazards of formaldehyde.

(c) An employer at a multiemployer worksite who establishes a regulated area shall communicate the access restrictions and locations of these areas to other employers with work operations at that worksite.

(6) Methods of compliance.

(a) Engineering controls and work practices. The employer shall institute engineering and work practice controls to reduce and maintain employee exposures to formaldehyde at or below the TWA and the STEL.

(b) Exception. Whenever the employer has established that feasible engineering and work practice controls cannot reduce employee exposure to or below either of the PELs, the employer shall apply these controls to reduce employee exposures to the extent feasible and shall supplement them with respirators which satisfy this standard.

(7) Respiratory protection.

(a) General. For employees who use respirators required by this section, the employer must provide respirators that comply with the requirements of this subsection. Respirators must be used during:

(i) Periods necessary to install or implement feasible engineering and work-practice controls;

(ii) Work operations, such as maintenance and repair activities or vessel cleaning, for which the employer establishes that engineering and work-practice controls are not feasible;

(iii) Work operations for which feasible engineering and work-practice controls are not yet sufficient to reduce exposure to or below the PELs;

(iv) Emergencies.

(b) Respirator program.

(i) The employer must implement a respiratory protection program as required by chapter 296-842 WAC, except WAC 296-842-13005 and 296-842-14005.

(ii) If air-purifying chemical-cartridge respirators are used, the employer must:

(A) Replace the cartridge after three hours of use or at the end of the workshift, whichever occurs first, unless the cartridge contains a NIOSH-certified end-of-service-life indicator (ESLI) to show when breakthrough occurs.

(B) Unless the canister contains a NIOSH-certified ESLI to show when breakthrough occurs, replace canisters used in atmospheres up to 7.5 ppm (10 x PEL) every four hours and industrial-sized canisters used in atmospheres up to 75 ppm (100 x PEL) every two hours, or at the end of the workshift, whichever occurs first.

(c) Respirator selection.

(i) The employer must select appropriate respirators from

Table 1 of this section.

TABLE 1
MINIMUM REQUIREMENTS FOR RESPIRATORY PROTECTION AGAINST FORMALDEHYDE

Condition of use or formaldehyde concentration (ppm)	Minimum respirator required[1]
Up to 7.5 ppm (10 x PEL)	Full facepiece with cartridges or canisters specifically approved for protection against formaldehyde[2].
Up to 75 ppm (100 x PEL)	Full-face mask with chin style or chest or back mounted type industrial size canister specifically approved for protection against formaldehyde. Type C supplied-air respirator pressure demand or continuous flow type, with full facepiece, hood, or helmet.
Above 75 ppm or unknown (emergencies) (100 x PEL)	Self-contained breathing apparatus (SCBA) with positive-pressure full facepiece. Combination supplied-air, full facepiece positive-pressure respirator with auxiliary self-contained air supply.
Fire fighting	SCBA with positive-pressure in full facepiece.
Escape	SCBA in demand or pressure demand mode. Full-face mask with chin style or front or back mounted type industrial size canister specifically approved for protection against formaldehyde.

[1] Respirators specified for use at higher concentrations may be used at lower concentrations.

[2] A half-mask respirator with cartridges specifically approved for protection against formaldehyde can be substituted for the full facepiece respirator providing that effective gas-proof goggles are provided and used in combination with the half-mask respirator.

(ii) The employer must provide a powered air-purifying respirator adequate to protect against formaldehyde exposure to any employee who has difficulty using a negative-pressure respirator.

(8) Protective equipment and clothing. Employers shall comply with the provisions of WAC 296-800-160. When protective

equipment or clothing is provided under these provisions, the employer shall provide these protective devices at no cost to the employee and assure that the employee wears them.

(a) Selection. The employer shall select protective clothing and equipment based upon the form of formaldehyde to be encountered, the conditions of use, and the hazard to be prevented.

(i) All contact of the eyes and skin with liquids containing one percent or more formaldehyde shall be prevented by the use of chemical protective clothing made of material impervious to formaldehyde and the use of other personal protective equipment, such as goggles and face shields, as appropriate to the operation.

(ii) Contact with irritating or sensitizing materials shall be prevented to the extent necessary to eliminate the hazard.

(iii) Where a face shield is worn, chemical safety goggles are also required if there is a danger of formaldehyde reaching the area of the eye.

(iv) Full body protection shall be worn for entry into areas where concentrations exceed 100 ppm and for emergency reentry into areas of unknown concentration.

(b) Maintenance of protective equipment and clothing.

(i) The employer shall assure that protective equipment and clothing that has become contaminated with formaldehyde is cleaned or laundered before its reuse.

(ii) When ventilating formaldehyde-contaminated clothing and equipment, the employer shall establish a storage area so that employee exposure is minimized. Containers for contaminated clothing and equipment and storage areas shall have labels and signs containing the following information:

DANGER
FORMALDEHYDE-CONTAMINATED (CLOTHING) EQUIPMENT
AVOID INHALATION AND SKIN CONTACT

(iii) The employer shall assure that only persons trained to recognize the hazards of formaldehyde remove the contaminated material from the storage area for purposes of cleaning, laundering, or disposal.

(iv) The employer shall assure that no employee takes home equipment or clothing that is contaminated with formaldehyde.

(v) The employer shall repair or replace all required protective clothing and equipment for each affected employee as necessary to assure its effectiveness.

(vi) The employer shall inform any person who launders, cleans, or repairs such clothing or equipment of formaldehyde's potentially harmful effects and of procedures to safely handle the clothing and equipment.

(9) Hygiene protection.

(a) The employer shall provide change rooms, as described in WAC 296-24-120 for employees who are required to change from work clothing into protective clothing to prevent skin contact

with formaldehyde.

(b) If employees' skin may become splashed with solutions containing one percent or greater formaldehyde, for example because of equipment failure or improper work practices, the employer shall provide conveniently located quick drench showers and assure that affected employees use these facilities immediately.

(c) If there is any possibility that an employee's eyes may be splashed with solutions containing 0.1 percent or greater formaldehyde, the employer shall provide acceptable eyewash facilities within the immediate work area for emergency use.

(10) Housekeeping. For operations involving formaldehyde liquids or gas, the employer shall conduct a program to detect leaks and spills, including regular visual inspections.

(a) Preventative maintenance of equipment, including surveys for leaks, shall be undertaken at regular intervals.

(b) In work areas where spillage may occur, the employer shall make provisions to contain the spill, to decontaminate the work area, and to dispose of the waste.

(c) The employer shall assure that all leaks are repaired and spills are cleaned promptly by employees wearing suitable protective equipment and trained in proper methods for cleanup and decontamination.

(d) Formaldehyde-contaminated waste and debris resulting from leaks or spills shall be placed for disposal in sealed containers bearing a label warning of formaldehyde's presence and of the hazards associated with formaldehyde.

(11) Emergencies. For each workplace where there is the possibility of an emergency involving formaldehyde, the employer shall assure appropriate procedures are adopted to minimize injury and loss of life. Appropriate procedures shall be implemented in the event of an emergency.

(12) Medical surveillance.

(a) Employees covered.

(i) The employer shall institute medical surveillance programs for all employees exposed to formaldehyde at concentrations at or exceeding the action level or exceeding the STEL.

(ii) The employer shall make medical surveillance available for employees who develop signs and symptoms of overexposure to formaldehyde and for all employees exposed to formaldehyde in emergencies. When determining whether an employee may be experiencing signs and symptoms of possible overexposure to formaldehyde, the employer may rely on the evidence that signs and symptoms associated with formaldehyde exposure will occur only in exceptional circumstances when airborne exposure is less than 0.1 ppm and when formaldehyde is present in materials in concentrations less than 0.1 percent.

(b) Examination by a physician. All medical procedures,

including administration of medical disease questionnaires, shall be performed by or under the supervision of a licensed physician and shall be provided without cost to the employee, without loss of pay, and at a reasonable time and place.

(c) Medical disease questionnaire. The employer shall make the following medical surveillance available to employees prior to assignment to a job where formaldehyde exposure is at or above the action level or above the STEL and annually thereafter. The employer shall also make the following medical surveillance available promptly upon determining that an employee is experiencing signs and symptoms indicative of possible overexposure to formaldehyde.

(i) Administration of a medical disease questionnaire, such as in Appendix D, which is designed to elicit information on work history, smoking history, any evidence of eye, nose, or throat irritation; chronic airway problems or hyperreactive airway disease; allergic skin conditions or dermatitis; and upper or lower respiratory problems.

(ii) A determination by the physician, based on evaluation of the medical disease questionnaire, of whether a medical examination is necessary for employees not required to wear respirators to reduce exposure to formaldehyde.

(d) Medical examinations. Medical examinations shall be given to any employee who the physician feels, based on information in the medical disease questionnaire, may be at increased risk from exposure to formaldehyde and at the time of initial assignment and at least annually thereafter to all employees required to wear a respirator to reduce exposure to formaldehyde. The medical examination shall include:

(i) A physical examination with emphasis on evidence of irritation or sensitization of the skin and respiratory system, shortness of breath, or irritation of the eyes.

(ii) Laboratory examinations for respirator wearers consisting of baseline and annual pulmonary function tests. As a minimum, these tests shall consist of forced vital capacity (FVC), forced expiratory volume in one second (FEV1), and forced expiratory flow (FEF).

(iii) Any other test which the examining physician deems necessary to complete the written opinion.

(iv) Counseling of employees having medical conditions that would be directly or indirectly aggravated by exposure to formaldehyde on the increased risk of impairment of their health.

(e) Examinations for employees exposed in an emergency. The employer shall make medical examinations available as soon as possible to all employees who have been exposed to formaldehyde in an emergency.

(i) The examination shall include a medical and work history with emphasis on any evidence of upper or lower

respiratory problems, allergic conditions, skin reaction or hypersensitivity, and any evidence of eye, nose, or throat irritation.

(ii) Other examinations shall consist of those elements considered appropriate by the examining physician.

(f) Information provided to the physician. The employer shall provide the following information to the examining physician:

(i) A copy of this standard and Appendices A, C, D, and E;

(ii) A description of the affected employee's job duties as they relate to the employee's exposure to formaldehyde;

(iii) The representative exposure level for the employee's job assignment;

(iv) Information concerning any personal protective equipment and respiratory protection used or to be used by the employee; and

(v) Information from previous medical examinations of the affected employee within the control of the employer.

(vi) In the event of a nonroutine examination because of an emergency, the employer shall provide to the physician as soon as possible: A description of how the emergency occurred and the exposure the victim may have received.

(g) Physician's written opinion.

(i) For each examination required under this standard, the employer shall obtain a written opinion from the examining physician. This written opinion shall contain the results of the medical examination except that it shall not reveal specific findings or diagnoses unrelated to occupational exposure to formaldehyde. The written opinion shall include:

(A) The physician's opinion as to whether the employee has any medical condition that would place the employee at an increased risk of material impairment of health from exposure to formaldehyde;

(B) Any recommended limitations on the employee's exposure or changes in the use of personal protective equipment, including respirators;

(C) A statement that the employee has been informed by the physician of any medical conditions which would be aggravated by exposure to formaldehyde, whether these conditions may have resulted from past formaldehyde exposure or from exposure in an emergency, and whether there is a need for further examination or treatment.

(ii) The employer shall provide for retention of the results of the medical examination and tests conducted by the physician.

(iii) The employer shall provide a copy of the physician's written opinion to the affected employee within fifteen days of its receipt.

(h) Medical removal.

(i) The provisions of this subdivision apply when an employee reports significant irritation of the mucosa of the eyes or of the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization attributed to workplace formaldehyde exposure. Medical removal provisions do not apply in case of dermal irritation or dermal sensitization when the product suspected of causing the dermal condition contains less than 0.05% formaldehyde.

(ii) An employee's report of signs or symptoms of possible overexposure to formaldehyde shall be evaluated by a physician selected by the employer pursuant to (c) of this subsection. If the physician determines that a medical examination is not necessary under (c)(ii) of this subsection, there shall be a two-week evaluation and remediation period to permit the employer to ascertain whether the signs or symptoms subside untreated or with the use of creams, gloves, first-aid treatment, or personal protective equipment. Industrial hygiene measures that limit the employee's exposure to formaldehyde may also be implemented during this period. The employee shall be referred immediately to a physician prior to expiration of the two-week period if the signs or symptoms worsen. Earnings, seniority, and benefits may not be altered during the two-week period by virtue of the report.

(iii) If the signs or symptoms have not subsided or been remedied by the end of the two-week period, or earlier if signs or symptoms warrant, the employee shall be examined by a physician selected by the employer. The physician shall presume, absent contrary evidence, that observed dermal irritation or dermal sensitization are not attributable to formaldehyde when products to which the affected employee is exposed contain less than 0.1% formaldehyde.

(iv) Medical examinations shall be conducted in compliance with the requirements of (e)(i) and (ii) of this subsection. Additional guidelines for conducting medical exams are contained in WAC 296-62-07546, Appendix C.

(v) If the physician finds that significant irritation of the mucosa of the eyes or the upper airways, respiratory sensitization, dermal irritation, or dermal sensitization result from workplace formaldehyde exposure and recommends restrictions or removal. The employer shall promptly comply with the restrictions or recommendations of removal. In the event of a recommendation of removal, the employer shall remove the affected employee from the current formaldehyde exposure and if possible, transfer the employee to work having no or significantly less exposure to formaldehyde.

(vi) When an employee is removed pursuant to item (v) of this subdivision, the employer shall transfer the employee to comparable work for which the employee is qualified or can be trained in a short period (up to six months), where the

formaldehyde exposures are as low as possible, but not higher than the action level. The employer shall maintain the employee's current earnings, seniority, and other benefits. If there is no such work available, the employer shall maintain the employee's current earnings, seniority, and other benefits until such work becomes available, until the employee is determined to be unable to return to workplace formaldehyde exposure, until the employee is determined to be able to return to the original job status, or for six months, whichever comes first.

(vii) The employer shall arrange for a follow-up medical examination to take place within six months after the employee is removed pursuant to this subsection. This examination shall determine if the employee can return to the original job status, or if the removal is to be permanent. The physician shall make a decision within six months of the date the employee was removed as to whether the employee can be returned to the original job status, or if the removal is to be permanent.

(viii) An employer's obligation to provide earnings, seniority, and other benefits to a removed employee may be reduced to the extent that the employee receives compensation for earnings lost during the period of removal either from a publicly or employer-funded compensation program or from employment with another employer made possible by virtue of the employee's removal.

(ix) In making determinations of the formaldehyde content of materials under this subsection the employer may rely on objective data.

(i) Multiple physician review.

(i) After the employer selects the initial physician who conducts any medical examination or consultation to determine whether medical removal or restriction is appropriate, the employee may designate a second physician to review any findings, determinations, or recommendations of the initial physician and to conduct such examinations, consultations, and laboratory tests as the second physician deems necessary and appropriate to evaluate the effects of formaldehyde exposure and to facilitate this review.

(ii) The employer shall promptly notify an employee of the right to seek a second medical opinion after each occasion that an initial physician conducts a medical examination or consultation for the purpose of medical removal or restriction.

(iii) The employer may condition its participation in, and payment for, the multiple physician review mechanism upon the employee doing the following within fifteen days after receipt of the notification of the right to seek a second medical opinion, or receipt of the initial physician's written opinion, whichever is later:

(A) The employee informs the employer of the intention to seek a second medical opinion; and

(B) The employee initiates steps to make an appointment with a second physician.

(iv) If the findings, determinations, or recommendations of the second physician differ from those of the initial physician, then the employer and the employee shall assure that efforts are made for the two physicians to resolve the disagreement. If the two physicians are unable to quickly resolve their disagreement, then the employer and the employee through their respective physicians shall designate a third physician who shall be a specialist in the field at issue:

(A) To review the findings, determinations, or recommendations of the prior physicians; and

(B) To conduct such examinations, consultations, laboratory tests, and discussions with prior physicians as the third physician deems necessary to resolve the disagreement of the prior physicians.

(v) In the alternative, the employer and the employee or authorized employee representative may jointly designate such third physician.

(vi) The employer shall act consistent with the findings, determinations, and recommendations of the third physician, unless the employer and the employee reach an agreement which is otherwise consistent with the recommendations of at least one of the three physicians.

(13) Hazard communication.

(a) General. Notwithstanding any exemption granted in WAC 296-800-170 for wood products, each employer who has a workplace covered by this standard shall comply with the requirements of WAC 296-800-170. The definitions of the chemical hazard communication standard shall apply under this standard.

(i) The following shall be subject to the hazard communication requirements of this section: Formaldehyde gas, all mixtures or solutions composed of greater than 0.1 percent formaldehyde, and materials capable of releasing formaldehyde into the air under reasonably foreseeable concentrations reaching or exceeding 0.1 ppm.

(ii) As a minimum, specific health hazards that the employer shall address are: Cancer, irritation and sensitization of the skin and respiratory system, eye and throat irritation, and acute toxicity.

(b) Manufacturers and importers who produce or import formaldehyde or formaldehyde-containing products shall provide downstream employers using or handling these products with an objective determination through the required labels and MSDSs as required by chapter 296-839 WAC.

(c) Labels.

(i) The employer shall assure that hazard warning labels complying with the requirements of WAC 296-800-170 are affixed to all containers of materials listed in (a)(i) of this

subsection, except to the extent that (a)(i) of this subsection is inconsistent with this item.

(ii) Information on labels. As a minimum, for all materials listed in (a)(i) of this subsection, capable of releasing formaldehyde at levels of 0.1 ppm to 0.5 ppm, labels shall identify that the product contains formaldehyde: List the name and address of the responsible party; and state that physical and health hazard information is readily available from the employer and from material safety data sheets.

(iii) For materials listed in (a)(i) of this subsection, capable of releasing formaldehyde at levels above 0.5 ppm, labels shall appropriately address all the hazards as defined in WAC 296-800-170, and Appendices A and B, including respiratory sensitization, and shall contain the words "Potential Cancer Hazard."

(iv) In making the determinations of anticipated levels of formaldehyde release, the employer may rely on objective data indicating the extent of potential formaldehyde release under reasonably foreseeable conditions of use.

(v) Substitute warning labels. The employer may use warning labels required by other statutes, regulations, or ordinances which impart the same information as the warning statements required by this subitem.

(d) Material safety data sheets.

(i) Any employer who uses formaldehyde-containing materials listed in (a)(i) of this subsection shall comply with the requirements of WAC 296-800-170 with regard to the development and updating of material safety data sheets.

(ii) Manufacturers, importers, and distributors of formaldehyde containing materials listed in (a)(i) of this subsection shall assure that material safety data sheets and updated information are provided to all employers purchasing such materials at the time of the initial shipment and at the time of the first shipment after a material safety data sheet is updated.

(e) Written hazard communication program. The employer shall develop, implement, and maintain at the workplace, a written hazard communication program for formaldehyde exposures in the workplace, which at a minimum describes how the requirements specified in this section for labels and other forms of warning and material safety data sheets, and subsection (14) of this section for employee information and training, will be met. Employees in multiemployer workplaces shall comply with the requirements of WAC 296-800-170.

(14) Employee information and training.

(a) Participation. The employer shall assure that all employees who are assigned to workplaces where there is a health hazard from formaldehyde participate in a training program, except that where the employer can show, using objective data,

that employees are not exposed to formaldehyde at or above 0.1 ppm, the employer is not required to provide training.

(b) Frequency. Employers shall provide such information and training to employees at the time of their initial assignment and whenever a new exposure to formaldehyde is introduced into their work area. The training shall be repeated at least annually.

(c) Training program. The training program shall be conducted in a manner which the employee is able to understand and shall include:

(i) A discussion of the contents of this regulation and the contents of the material safety data sheet;

(ii) The purpose for and a description of the medical surveillance program required by this standard, including:

(A) A description of the potential health hazards associated with exposure to formaldehyde and a description of the signs and symptoms of exposure to formaldehyde.

(B) Instructions to immediately report to the employer the development of any adverse signs or symptoms that the employee suspects is attributable to formaldehyde exposure.

(iii) Description of operations in the work area where formaldehyde is present and an explanation of the safe work practices appropriate for limiting exposure to formaldehyde in each job;

(iv) The purpose for, proper use of, and limitations of personal protective clothing;

(v) Instructions for the handling of spills, emergencies, and clean-up procedures;

(vi) An explanation of the importance of engineering and work practice controls for employee protection and any necessary instruction in the use of these controls;

(vii) A review of emergency procedures including the specific duties or assignments of each employee in the event of an emergency; and

(viii) The purpose, proper use, limitations, and other training requirements for respiratory protection as required by chapter 296-842 WAC.

(d) Access to training materials.

(i) The employer shall inform all affected employees of the location of written training materials and shall make these materials readily available, without cost, to the affected employees.

(ii) The employer shall provide, upon request, all training materials relating to the employee training program to the director of labor and industries, or his/her designated representative.

(15) Recordkeeping.

(a) Exposure measurements. The employer shall establish and maintain an accurate record of all measurements taken to

monitor employee exposure to formaldehyde. This record shall include:

(i) The date of measurement;

(ii) The operation being monitored;

(iii) The methods of sampling and analysis and evidence of their accuracy and precision;

(iv) The number, durations, time, and results of samples taken;

(v) The types of protective devices worn; and

(vi) The names, job classifications, Social Security numbers, and exposure estimates of the employees whose exposures are represented by the actual monitoring results.

(b) Exposure determinations. Where the employer has determined that no monitoring is required under this standard, the employer shall maintain a record of the objective data relied upon to support the determination that no employee is exposed to formaldehyde at or above the action level.

(c) Medical surveillance. The employer shall establish and maintain an accurate record for each employee subject to medical surveillance under this standard. This record shall include:

(i) The name and Social Security number of the employee;

(ii) The physician's written opinion;

(iii) A list of any employee health complaints that may be related to exposure to formaldehyde; and

(iv) A copy of the medical examination results, including medical disease questionnaires and results of any medical tests required by the standard or mandated by the examining physician.

(d) Record retention. The employer shall retain records required by this standard for at least the following periods:

(i) Exposure records and determinations shall be kept for at least thirty years; and

(ii) Medical records shall be kept for the duration of employment plus thirty years.

(e) Availability of records.

(i) Upon request, the employer shall make all records maintained as a requirement of this standard available for examination and copying to the director of labor and industries, or his/her designated representative.

(ii) The employer shall make employee exposure records, including estimates made from representative monitoring and available upon request for examination and copying, to the subject employee, or former employee, and employee representatives in accordance with chapter 296-802 WAC.

(iii) Employee medical records required by this standard shall be provided upon request for examination and copying, to the subject employee, or former employee, or to anyone having the specific written consent of the subject employee or former employee in accordance with chapter 296-802 WAC.

AMENDATORY SECTION (Amending WSR 05-03-093, filed 1/18/05, effective 3/1/05)

WAC 296-155-160 Gases, vapors, fumes, dusts, and mists. (1) Exposure of employees to inhalation, ingestion, skin absorption, or contact with any material or substance at a concentration above those specified in the general occupational health standards, WAC 296-62-07515 shall be avoided.

(2) To achieve compliance with subsection (1) of this section, administrative or engineering controls must first be implemented whenever feasible. When such controls are not feasible to achieve full compliance, protective equipment or other protective measures shall be used to keep the exposure of employees to air contaminants within the limits prescribed in WAC 296-62-07515. Any equipment and technical measures used for this purpose must first be approved for each particular use by a competent industrial hygienist or other technically qualified person. Whenever respirators are used, their use shall comply with WAC 296-155-220.

(3) Whenever internal combustion equipment exhausts in enclosed spaces, tests shall be made and recorded to ensure that employees are not exposed to unsafe concentrations of toxic gases or oxygen deficient atmospheres. See chapter 296-62 WAC, the general occupational health standards and chapter 296-841 WAC, identifying and controlling respiratory hazards.

(4) Whenever any employee is exposed to asbestos, the provisions of the general occupational health standards, chapter 296-62 WAC shall apply.

(5) Subsections (1) and (2) of this section do not apply to the exposure of employees to formaldehyde. Whenever any employee is exposed to formaldehyde, the requirements of chapter 296-856 WAC ((~~296-62-07540~~)) shall apply.

AMENDATORY SECTION (Amending WSR 03-10-068, filed 5/6/03, effective 8/1/03)

WAC 296-307-56045 Label containers of hazardous chemicals.

Exemption: Containers are exempt from this section if **ALL** hazardous contents are listed in Table 11.

You must:

✎ Make sure every container of hazardous chemicals leaving the workplace is properly labeled. This includes **ALL** of the following:

– The identity of the hazardous chemical (the chemical or common name) that matches the identity used on the MSDS

– An appropriate hazard warning

– The name and address of the chemical manufacturer, importer, or other responsible party

– Make sure labeling does not conflict with the requirements of:

✎ The Hazardous Materials Transportation Act (49 U.S.C. 1801 et seq.)

AND

✎ Regulations issued under the act by the U.S. Department of Transportation (Title 49 of the Code of Federal Regulations, Parts 171 through 180). See http://www.dot.gov

– Revise labels within three months of becoming aware of new and significant information about chemical hazards

– Provide revised labels on containers beginning with the first shipment after a revision, to manufacturers, distributors or employers

– Revise the label when a chemical is not currently used, produced or imported, before:

✎ You resume shipping (or transferring) the chemical

OR

✎ The chemical is reintroduced in the workplace

– Label information

✎ Clearly written in English

AND

✎ Prominently displayed on the container.

Reference: Additional labeling requirements for specific hazardous chemicals (for example, asbestos((~~, cadmium, and formaldehyde~~)) and cadmium) are found in chapter 296-62 WAC, General occupational health standards (see parts F, G, ((~~I~~)) and I-1 of that chapter).

Note: When the conditions specified in Table 10 are met for the solid material products listed, you are not required to provide labels for every shipment.

Table 10
Labeling for Solid Materials

You need only send labels with the first shipment, IF the product is	**And**

Whole grain	✎ It is shipped to the same customer **AND** ✎ No hazardous chemicals are part of or known to be present with the product which could expose employees during handling
Solid untreated wood	
Solid metal For example: Steel beams, metal castings	
Plastic items	– For example, cutting fluids on solid metal, and pesticides with grain

Exemptions: The chemicals (and items) listed in Table 11 are **EXEMPT** from **THIS SECTION** under the conditions specified. Requirements in other sections still apply.

Table 11
Conditional Label Exemptions

This section does not apply to	When the product is
✎ Pesticides – Meeting the definition of "pesticides" in the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (see Title 7, U.S.C. Chapter 6, Subchapter II, section 136[1])	✎ Subject to – Labeling requirements of FIFRA[1] **AND** – Labeling regulations issued under FIFRA by the United States Environmental Protection Agency (EPA) (see Title 40 of the Code of Federal Regulations[2])
✎ A chemical substance or mixture	✎ Subject to

– Meeting the definition of "chemical substance" or "mixture" in the Toxic Substance Control Act (TSCA) (see Title 15 U.S.C. Chapter 53, Subchapter II, Section 2602[1])	– Labeling requirements of TSCA[1] **AND** – Labeling requirements issued under TSCA by the EPA (see Title 40 of the Code of Federal Regulations[2])
✎ Each of the following – Food – Food additives – Color additives – Drugs – Cosmetics – Medical devices or products – Veterinary devices or products – Materials intended for use in these products (for example: Flavors, and fragrances) ✎ As defined in – The Federal Food, Drug, and Cosmetic Act (see Title 21 U.S.C. Chapter 9, Subchapter II, Section 321[1]) **OR**	✎ Subject to: – Labeling requirements in Federal Food, Drug, and Cosmetic Act, Virus-Serum Toxin Act of 1913, and issued regulations enforced by the United States Food and Drug Administration (see Title 21 Parts 101-180 in the Code of Federal Regulations[3]) **OR** – Department of Agriculture (see Title 9, in the Code of Federal Regulations[3])

– The Virus-Serum Toxin Act of 1913 (see Title 21 U.S.C. Chapter 5, Section 151 et seq.[1]) **OR** – Regulations issued under these acts (see Title 21 Part 101 in the Code of Federal Regulations, and Title 9, in the Code of Federal Regulations[3])	
✎ Each of the following: – Distilled spirits (beverage alcohols) **AND** – Wine **AND** – Malt beverage ✎ As defined in – The Federal Alcohol Administration Act (see Title 27 U.S.C. Section 201[1]) **AND** – Regulations issued under this act (see Title 27 in the Code of Federal Regulations[3])	✎ Subject to: – Labeling requirements of Federal Alcohol Administration Act[1] **AND** – Labeling regulations issued under Federal Alcohol Administration Act by the Bureau of Alcohol, Tobacco, and Firearms (see Title 27 in the Code of Federal Regulations[3])
✎ Consumer products	✎ Subject to:

AND ✎ Hazardous substances – As defined in the Consumer Product Safety Act (see 15 U.S.C. 2051 et seq.[1]) **AND** – The Federal Hazardous Substances Act (see 15 U.S.C. 1261 et seq.[1])	– A consumer product safety or labeling requirement of the Consumer Product Safety Act or Federal Hazardous Substances Act[1] **OR** – Regulations issued under these acts by the Consumer Product Safety Commission (see Title 16 in the Code of Federal Regulations[3])
✎ Agricultural seed **AND** ✎ Vegetable seed treated with pesticides	✎ Labeled as required by – The Federal Seed Act (see Title 7 U.S.C. Chapter 37 Section 1551 et seq.[1]) **AND** – Labeling requirements issued under Federal Seed Act by the United States Department of Agriculture[1]

[1]This federal act is included in the United States Code. See http://www.access.gpo.gov/uscode/uscmain.html.
[2]See http://www.epa.gov.
[3]See http://www.access.gpo.gov/nara/cfr/index.html.

AMENDATORY SECTION (Amending WSR 05-01-166, filed 12/21/04, effective 4/2/05)

WAC 296-307-624 Scope.

This part applies **only** if your employees:

✎ Are exposed to a respiratory hazard

OR

✎ Could be exposed to one of the specific hazards listed below.

This part applies to any workplace with potential or actual employee exposure to respiratory hazards. It requires you to protect employees from respiratory hazards by applying this protection strategy:

✎ Evaluate employee exposures to determine if controls are needed

✎ Use feasible controls. For example, enclose or confine the operation, use ventilation systems, or substitute with less toxic material

✎ Use respirators if controls are not feasible or if they cannot completely remove the hazard.

Definition:

Exposed or exposure:

The contact an employee has with a toxic substance, harmful physical agent or oxygen deficient condition, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry, such as inhalation, ingestion, skin contact, or skin absorption.

Note: Examples of substances that may be respiratory hazards when airborne include:
✎ Chemicals listed in Table 3
✎ Any substance
– Listed in the latest edition of the NIOSH Registry of Toxic Effects of Chemical Substances
– For which positive evidence of an acute or chronic health hazard exists through tests conducted by, or known to, the employer
– That may pose a hazard to human health as stated on a material safety data sheet kept by, or known to, the employer
✎ Atmospheres considered oxygen deficient
✎ Biological agents such as harmful bacteria, viruses or fungi
– Examples include airborne TB aerosols and anthrax
✎ Pesticides with a label requirement for respirator use
✎ Chemicals used as crowd control agents such as pepper spray
✎ Chemicals present at clandestine drug labs.
These substances can be airborne as dusts, fibers, fogs, fumes, mists, gases, smoke, sprays, vapors, or aerosols.

Reference: ✎ Substances in Table 3 that are marked with an X in the "skin" column may require personal protective equipment (PPE). See WAC 296-307-100, Personal protective equipment, for additional information and requirements.
✎ If any of the following hazards are present in your workplace, you will need both this part and any of the following specific rules that apply:

Hazard	((~~**Rule that applies**~~))
Acrylonitrile	((~~WAC 296-62-07336~~))

Arsenic (inorganic)	((~~WAC 296-62-07347~~))
Asbestos	((~~WAC 296-62-077~~))
Benzene	((~~WAC 296-62-07523~~))
Butadiene	((~~WAC 296-62-07460~~))
Cadmium	((~~WAC 296-62-074 through 296-62-07449 or 296-155-174~~))
Carcinogens	((~~Chapter 296-62 WAC, Part F~~))
Coke ovens	((~~Chapter 296-62 WAC, Part O~~))
Cotton dust	((~~Chapter 296-62 WAC, Part N~~))
1,2-Dibromo-3-chloropropane	((~~WAC 296-62-07342~~))
Ethylene oxide	((~~WAC 296-62-07355~~))
Formaldehyde	((~~WAC 296-62-07540~~))
Lead	((~~WAC 296-62-07521 or 296-155-176~~))
Methylene chloride	((~~WAC 296-62-07470~~))
Methylenedianiline	((~~WAC 296-62-076 or 296-155-173~~))
Thiram	((~~WAC 296-62-07519~~))
Vinyl chloride	((~~WAC 296-62-07329~~))

AMENDATORY SECTION (Amending WSR 05-01-166, filed 12/21/04, effective 4/2/05)

WAC 296-307-62625 Permissible exposure limits of air contaminants.

IMPORTANT:

The following information applies to Table 3, Permissible Exposure Limits for Air Contaminants.

✎ Exposure needs to be determined from personal air samples taken in the breathing zone or from monitoring representative of the employee's breathing zone.

✎ Ppm refers to parts of vapor or gas per million parts of air by volume, at 25 degrees C and 760 mm Hg pressure.

✎ Mg/m^3 refers to milligrams of substance per cubic meter of air.

✎ For a metal that is measured as the metal itself, only the CAS number for the metal is given. The CAS numbers for individual compounds of the metal are not provided. For more information about CAS registry numbers see the web site:

http://www.cas.org.

✎ Time weighted averages (TWA_8) represent the maximum allowed average exposure for any 8-hour time period. For work periods longer than 8 hours the TWA_8 needs to be determined using the 8 continuous hours with the highest average concentration.

✎ Short-term exposure limits (STEL) represent maximum allowed average exposure for any fifteen-minute period, unless another time period is noted in Table 3.

✎ The ceiling represents the maximum allowed exposure for the shortest time period that can feasibly be measured.

✎ An "X" in the "skin" column indicates the substance can be absorbed through the skin, either by airborne or direct contact.

✎ Requirements for the use of gloves, coveralls, goggles, and other personal protective equipment can be found in WAC 296-307-100.

✎ The respirable fraction of particulate is measured by sampling with a size-selector having the following characteristics:

Mean aerodynamic diameter in micrometers	**Percent passing the selector**
1	97
2	91
3	74
4	50
5	30
6	17
7	9
8	5
10	1

Table 3 "Permissible Exposure Limits for Air Contaminants"

Substance	CAS	TWA_8	STEL	Ceiling	Skin
Abate (Temephos)	3383-96-8	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Acetaldehyde	75-07-0	100 ppm	150 ppm	----	----
Acetic acid	64-19-7	10 ppm	20 ppm	----	----
Acetic anhydride	108-24-7	----	----	5 ppm	----
Acetone	67-64-1	750 ppm	1,000 ppm	----	----

Acetonitrile	75-05-8	40 ppm	60 ppm	----	----
2-Acetylaminofluorene (~~(see WAC 296-62-073)~~)	53-96-3	----	----	----	----
Acetylene	74-86-2	Simple asphyxiant	----	----	----
Acetylene dichloride (1,2-Dichloroethylene)	540-59-0	200 ppm	250 ppm	----	----
Acetylene tetrabromide	79-27-6	1 ppm	3 ppm	----	----
Acetylsalicylic acid (Aspirin)	50-78-2	5 mg/m^3	10 mg/m^3	----	----
Acrolein	107-02-8	0.1 ppm	0.3 ppm	----	----
Acrylamide	79-06-1	0.03 mg/m^3	0.09 mg/m^3	----	X
Acrylic acid	79-10-7	10 ppm	20 ppm	----	X
Acrylonitrile (Vinyl cyanide) (~~(see WAC 296-62-07336)~~)	107-13-1	2 ppm	10 ppm	----	----
Aldrin	309-00-2	0.25 mg/m^3	0.75 mg/m^3	----	X
Allyl alcohol	107-18-6	2 ppm	4 ppm	----	X
Allyl chloride	107-05-1	1 ppm	2 ppm	----	----
Allyl glycidyl ether (AGE)	106-92-3	5 ppm	10 ppm	----	----
Allyl propyl disulfide	2179-59-1	2 ppm	3 ppm	----	----
alpha-Alumina (Aluminum oxide)	1344-28-1	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Aluminum (as Al)	7429-90-5	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Pyro powders	----	5 mg/m^3	10 mg/m^3	----	----
Welding fumes	----	5 mg/m^3	10 mg/m^3	----	----
Soluble salts	----	2 mg/m^3	4 mg/m^3	----	----
Alkyls (NOC)	----	2 mg/m^3	4 mg/m^3	----	----
Aluminum oxide (Alundum, Corundum)	7429-90-5	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
4-Aminodiphenyl (~~(see WAC 296-62-073)~~)	92-67-1	----	----	----	----
2-Aminoethanol (Ethanolamine)	141-43-5	3 ppm	6 ppm	----	----
2-Aminopyridine	504-29-0	0.5 ppm	1.5 ppm	----	----
Amitrole	61-82-5	0.2 mg/m^3	0.6 mg/m^3	----	----

Ammonia	7664-41-7	25 ppm	35 ppm	----	----
Ammonium chloride, fume	12125-02-9	10 mg/m^3	20 mg/m^3	----	----
Ammonium sulfamate (Ammate)	7773-06-0	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5.0 mg/m^3	10 mg/m^3	----	----
n-Amyl acetate	628-63-7	100 ppm	150 ppm	----	----
sec-Amyl acetate	626-38-0	125 ppm	156 ppm	----	----
Aniline and homologues	62-53-3	2 ppm	4 ppm	----	X
Anisidine (o, p-isomers)	29191-52-4	0.1 ppm	0.3 ppm	----	X
Antimony and compounds (as Sb)	7440-36-0	0.5 mg/m^3	1.5 mg/m^3	----	----
ANTU (alpha Naphthyl thiourea)	86-88-4	0.3 mg/m^3	0.9 mg/m^3	----	----
Argon	7440-37-1	Simple asphyxiant	----	----	----
Arsenic, organic compounds (as As)	7440-38-2	0.2 mg/m^3	0.6 mg/m^3	----	----
Arsenic, inorganic compounds (as As) (when use is covered by WAC 296-62-07347)	7440-38-2	0.01 mg/m^3	----	----	----
Arsenic, inorganic compounds (as As) (when use is not covered by WAC 296-62-07347)	7440-38-2	0.2 mg/m^3	0.6 mg/m^3	----	----
Arsine	7784-42-1	0.05 ppm	0.15 ppm	----	----
Asbestos (((~~(see WAC 296-62-077)~~)))	----	----	----	----	----
Asphalt (Petroleum fumes)	8052-42-4	5 mg/m^3	10 mg/m^3	----	----
Atrazine	1912-24-9	5 mg/m^3	10 mg/m^3	----	----
Azinphos methyl (Guthion)	86-50-0	0.2 mg/m^3	0.6 mg/m^3	----	X
Azodrin (Monocrotophos)	6923-22-4	0.25 mg/m^3	0.75 mg/m^3	----	----
Barium, soluble compounds (as Ba)	7440-39-3	0.5 mg/m^3	1.5 mg/m^3	----	----
Barium sulfate	7727-43-7	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Baygon (Propoxur)	114-26-1	0.5 mg/m^3	1.5 mg/m^3	----	----
Benomyl	17804-35-2	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Benzene (((~~(see WAC 296-62-07523)~~)))	71-43-2	1 ppm	5 ppm	----	----

Benzidine (((~~(see WAC 296-62-073)~~)))	92-87-5	----	----	----	----
p-Benzoquinone (Quinone)	106-51-4	0.1 ppm	0.3 ppm	----	----
Benzo(a) pyrene (Coal tar pitch volatiles)	65996-93-2	0.2 mg/m^3	0.6 mg/m^3	----	----
Benzoyl peroxide	94-36-0	5 mg/m^3	10 mg/m^3	----	----
Benzyl chloride	100-44-7	1ppm	3 ppm	----	----
Beryllium and beryllium compounds (as Be)	7440-41-7	0.002 mg/m^3	0.005 mg/m^3 (30 min.)	0.025 mg/m^3	----
Biphenyl (Diphenyl)	92-52-4	0.2 ppm	0.6 ppm	----	----
Bismuth telluride, undoped	1304-82-1	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Bismuth telluride, Se-doped	----	5 mg/m^3	10 mg/m^3	----	----
Borates, tetra, sodium salts	----	----	----	----	----
Anhydrous	1330-43-4	1 mg/m^3	3 mg/m^3	----	----
Decahydrate	1303-96-4	5 mg/m^3	10 mg/m^3	----	----
Pentahydrate	12179-04-3	1 mg/m^3	3 mg/m^3	----	----
Boron oxide	1303-86-2	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Boron tribromide	10294-33-4	----	----	1 ppm	----
Boron trifluoride	6737-07-2	----	----	1 ppm	----
Bromacil	314-40-9	1 ppm	3 ppm	----	----
Bromine	7726-95-6	0.1 ppm	0.3 ppm	----	----
Bromine pentafluoride	7789-30-2	0.1 ppm	0.3 ppm	----	----
Bromochloromethane (Chlorobromomthane)	74-97-5	200 ppm	250 ppm	----	----
Bromoform	15-25-2	0.5 ppm	1.5 ppm	----	X
Butadiene (1,3-butadiene)	106-99-0	1 ppm	5 ppm	----	----
Butane	106-97-8	800 ppm	1,000 ppm	----	----
Butanethiol (Butyl mercaptan)	109-79-5	0.5 ppm	1.5 ppm	----	----
2-Butanone (Methyl ethyl ketone)	78-93-3	200 ppm	300 ppm	----	----
2-Butoxy ethanol (Butyl cellosolve)	111-76-2	25 ppm	38 ppm	----	X
n-Butyl acetate	123-86-4	150 ppm	200 ppm	----	----
sec-Butyl acetate	105-46-4	200 ppm	250 ppm	----	----
tert-Butyl acetate	540-88-5	200 ppm	250 ppm	----	----

Butyl acrylate	141-32-2	10 ppm	20 ppm	----	----
n-Butyl alcohol	71-36-3	----	----	50 ppm	X
sec-Butyl alcohol	78-92-2	100 ppm	150 ppm	----	----
tert-Butyl alcohol	75-65-0	100 ppm	150 ppm	----	----
Butylamine	109-73-9	----	----	5 ppm	X
Butyl cellosolve (2-Butoxy ethanol)	111-76-2	25 ppm	38 ppm	----	----
tert-Butyl chromate (as CrOs)	1189-85-1	----	----	0.1 mg/m^3	X
n-Butyl glycidyl ether (BGE)	2426-08-6	25 ppm	38 ppm	----	----
n-Butyl lactate	138-22-7	5 ppm	10 ppm	---	----
Butyl mercaptan	109-79-5	0.5 ppm	1.5 ppm	----	----
o-sec-Butylphenol	89-72-5	5 ppm	10 ppm	----	X
p-tert-Butyl-toluene	98-51-1	10 ppm	20 ppm	----	----
Cadmium oxide fume (as Cd) (((~~(see WAC 296-62-074)~~)))	1306-19-0	0.005 mg/m^3	----	----	----
Cadmium dust and salts (as Cd) (((~~(see WAC 296-62-074)~~)))	7440-43-9	0.005 mg/m^3	----	----	----
Calcium arsenate (((~~(see WAC 296-62-07347)~~)))	----	0.01 mg/m^3	----	----	----
Calcium carbonate	1317-65-3	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Calcium cyanamide	156-62-7	0.5 mg/m^3	1.5 mg/m^3	----	----
Calcium hydroxide	1305-62-0	5 mg/m^3	10 mg/m^3	----	----
Calcium oxide	1305-78-8	2 mg/m^3	4 mg/m^3	----	----
Calcium silicate	1344-95-2	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Calcium sulfate	7778-18-9	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Camphor (synthetic)	76-22-2	2 mg/m^3	4 mg/m^3	----	----
Caprolactam	105-60-2	----	----	----	----
Dust	----	1 mg/m^3	3 mg/m^3	----	----
Vapor	----	5 ppm	10 ppm	----	----
Captafol (Difolatan)	2425-06-1	0.1 mg/m^3	0.3 mg/m^3	----	X

Captan	133-06-2	5 mg/m^3	10 mg/m^3	----	----
Carbaryl (Sevin)	63-25-2	5 mg/m^3	10 mg/m^3	----	----
Carbofuran (Furadon)	1563-66-2	0.1 mg/m^3	0.3 mg/m^3	----	----
Carbon black	1333-86-4	3.5 mg/m^3	7 mg/m^3	----	----
Carbon dioxide	124-38-9	5,000 ppm	30,000 ppm	----	----
Carbon disulfide	75-15-0	4 ppm	12 ppm	----	X
Carbon monoxide	630-08-0	35 ppm	200 ppm (5 min.)	1,500 ppm	----
Carbon tetrabromide	558-13-4	0.1 ppm	0.3 ppm	----	----
Carbon tetrachloride (Tetrachloromethane)	56-23-5	2 ppm	4 ppm	----	X
Carbonyl chloride (Phosgene)	7803-51-2	0.1 ppm	0.3 ppm	----	----
Carbonyl fluoride	353-50-4	2 ppm	5 ppm	----	----
Catechol (Pyrocatechol)	120-80-9	5 ppm	10 ppm	----	X
Cellosolve acetate (2-Ethoxyethylacetate)	111-15-9	5 ppm	10 ppm	----	X
Cellulose (paper fiber)	9004-34-6	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Cesium hydroxide	21351-79-1	2 mg/m^3	4 mg/m^3	----	----
Chlordane	57-74-9	0.5 mg/m^3	1.5 mg/m^3	----	X
Chlorinated camphene (Toxaphen)	8001-35-2	0.5 mg/m^3	1 mg/m^3	----	X
Chlorinated diphenyl oxide	55720-99-5	0.5 mg/m^3	1.5 mg/m^3	----	----
Chlorine	7782-50-5	0.5 ppm	----	1 ppm	----
Chlorine dioxide	10049-04-4	0.1 ppm	0.3 ppm	----	----
Chlorine trifluoride	7790-91-2	----	----	0.1 ppm	----
Chloroacetaldehyde	107-20-0	----	----	1 ppm	----
a-Chloroacetophenone (Phenacyl chloride)	532-21-4	0.05 ppm	0.15 ppm	----	----
Chloroacetyl chloride	79-04-9	0.05 ppm	0.15 ppm	----	----
Chlorobenzene (Monochlorobenzene)	108-90-7	75 ppm	113 ppm	----	----
o-Chlorobenzylidene malononitrile (OCBM)	2698-41-1	----	----	0.05 ppm	X
Chlorobromomethane	74-97-5	200 ppm	250 ppm	----	----
2-Chloro-1, 3-butadiene (beta-Chloroprene)	126-99-8	10 ppm	20 ppm	----	X
Chlorodifluoromethane	75-45-6	1,000 ppm	1,250 ppm	----	----
Chlorodiphenyl (42% Chlorine) (PCB) (Polychlorobiphenyls)	53469-21-9	1 mg/m^3	3 mg/m^3	----	X

Chlorodiphenyl (54% Chlorine) (Polychlorobiphenyls (PCB))	11097-69-1	0.5 mg/m^3	1.5 mg/m^3	----	X
1-Chloro-2, 3-epoxypropane (Epichlorhydrin)	106-89-8	2 ppm	4 ppm	----	X
2-Chloroethanol (Ethylene chlorohydrin)	107-07-3	----	----	1 ppm	X
Chloroethylene (vinyl chloride) (((~~See WAC 296-62-07329~~)))	75-01-4	1 ppm	5 ppm	----	----
Chloroform (Trichloromethane)	67-66-3	2 ppm	4 ppm	----	----
1-Chloro-1-nitropropane	600-25-9	2 ppm	4 ppm	----	----
bis-Chloromethyl ether (((~~see WAC 296-62-073~~)))	542-88-1	----	----	----	----
Chloromethyl methyl ether (Methyl chloromethyl ether) (((~~see WAC 296-62-073~~)))	107-30-2	----	----	----	----
Chloropentafluoroethane	76-15-3	1,000 ppm	1,250 ppm	----	----
Chloropicrin (Nitrotrichloromethane)	76-06-2	0.1 ppm	0.3 ppm	----	----
beta-Chloroprene (2-Chloro-1, 3-butadiene)	126-99-8	10 ppm	20 ppm	----	X
o-Chlorostyrene	2039-87-4	50 ppm	75 ppm	----	----
o-Chlorotoluene	95-49-8	50 ppm	75 ppm	----	----
2-Chloro-6-trichloromethyl pyridine (Nitrapyrin)	1929-82-4	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Chlorpyrifos	2921-88-2	0.2 mg/m^3	0.6 mg/m^3	----	X
Chromic acid and chromates (as CrO3)	Varies with compound	0.1 mg/m^3	0.3 mg/m^3	----	----
Chromium, soluble, chromic and chromous salts (as Cr)	7440-47-3	0.5 mg/m^3	1.5 mg/m^3	----	----
Chromium (VI) compounds (as Cr)	----	0.05 mg/m^3	0.15 mg/m^3	----	----
Chromium metal and insoluble salts	7440-47-3	0.5 mg/m^3	1.5 mg/m^3	----	----
Chromyl chloride	14977-61-8	0.025 ppm	0.075 ppm	----	----
Chrysene (Coal tar pitch volatiles)	65996-93-2	0.2 mg/m^3	0.6 mg/m^3	----	----
Clopidol	2971-90-6	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Coal dust (less than 5% SiO2)	----	----	----	----	----
Respirable fraction	----	2 mg/m^3	4 mg/m^3	----	----
Coal dust (greater than or equal to 5% SiO2)	----	----	----	----	----

Respirable fraction	----	0.1 mg/m^3	0.3 mg/m^3	----	----
Coal tar pitch volatiles (benzene soluble fraction) (Particulate polycyclic aromatic hydrocarbons)	65996-93-2	0.2 mg/m^3	0.6 mg/m^3	----	----
Cobalt, metal fume & dust (as Co)	7440-48-4	0.05 mg/m^3	0.15 mg/m^3	----	----
Cobalt carbonyl (as Co)	10210-68-1	0.1 mg/m^3	0.3 mg/m^3	----	----
Cobalt hydrocarbonyl (as Co)	16842-03-8	0.1 mg/m^3	0.3 mg/m^3	----	----
Coke oven emissions (((~~see WAC 296-62-200~~)))	----	0.15 mg/m^3	----	----	----
Copper (as Cu)	7440-50-8	----	----	----	----
Fume	----	0.1 mg/m^3	0.3 mg/m^3	----	----
Dusts and mists	----	1 mg/m^3	3 mg/m^3	----	----
Cotton dust (raw) (waste sorting, blending, cleaning, willowing and garetting) (((~~see WAC 296-62-14533~~)))	----	1 mg/m^3	----	----	----
Corundum (Aluminum oxide)	7429-90-5	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Crag herbicide (Sesone, Sodium-2, 4-dichloro-phenoxyethyl sulfate)	136-78-7	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Cresol (all isomers)	1319-77-3	5 ppm	10 ppm	----	X
Crotonaldehyde	123-73-9; 4170-30-3	2 ppm	4 ppm	----	----
Crufomate	299-86-5	5 mg/m^3	10 mg/m^3	----	----
Cumene	98-82-8	50 ppm	75 ppm	----	X
Cyanamide	420-04-2	2 mg/m^3	4 mg/m^3	----	----
Cyanide (as CN)	Varies with compound	5 mg/m^3	10 mg/m^3	----	X
Cyanogen	460-19-5	10 ppm	20 ppm	----	----
Cyanogen chloride	506-77-4	----	----	0.3 ppm	----
Cyclohexane	110-82-7	300 ppm	375 ppm	----	----
Cyclohexanol	108-93-0	50 ppm	75 ppm	----	X
Cyclohexanone	108-94-1	25 ppm	38 ppm	----	X
Cyclohexene	110-83-8	300 ppm	375 ppm	----	----
Cyclohexylamine	108-91-8	10 ppm	20 ppm	----	----
Cyclonite (RDX)	121-82-4	1.5 mg/m^3	3.0 mg/m^3	----	X

Cyclopentadiene	542-92-7	75 ppm	113 ppm	----	----
Cyclopentane	287-92-3	600 ppm	750 ppm	----	----
Cyhexatin (Tricyclohexyltin hydroxide)	13121-70-5	5 mg/m^3	10 mg/m^3	----	----
2,4-D (Dichlorophenoxy-acetic acid)	94-75-7	10 mg/m^3	20 mg/m^3	----	----
DBCP (1,2-Dibromo-3-chloropropane) (((~~(See WAC 296-62-07342)~~)))	96-12-8	0.001 ppm	----	0.005 ppm	----
DDT (Dichlorodiphenyltri-chloroethane)	50-29-3	1 mg/m^3	3 mg/m^3	----	X
DDVP, (Dichlorvos)	62-73-7	0.1 ppm	0.3 ppm	----	X
Dasanit (Fensulfothion)	115-90-2	0.1 mg/m^3	0.3 mg/m^3	----	----
Decaborane	17702-41-9	0.05 ppm	0.15 ppm	----	X
Demeton	8065-48-3	0.01 ppm	0.03 ppm	----	X
Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	123-42-2	50 ppm	75 ppm	----	----
1, 2-Diaminoethane (Ethylenediamine)	107-15-3	10 ppm	20 ppm	----	----
Diazinon	333-41-5	0.1 mg/m^3	0.3 mg/m^3	----	X
Diazomethane	334-88-3	0.2 ppm	0.6 ppm	----	----
Diborane	19287-45-7	0.1 ppm	0.3 ppm	----	----
Dibrom (see Naled)	300-76-5	3 mg/m^3	6 mg/m^3	----	X
1, 2-Dibromo-3-chloropropane (DBCP) (((~~(see WAC 296-62-07342)~~)))	96-12-8	0.001 ppm	----	0.005 ppm	----
2-N-Dibutylamino ethanol	102-81-8	2 ppm	4 ppm	----	X
Dibutyl phosphate	107-66-4	1 ppm	2 ppm	----	----
Dibutyl phthalate	84-74-2	5 mg/m^3	10 mg/m^3	----	----
Dichloroacetylene	7572-29-4	----	-----	0.1 ppm	----
o-Dichlorobenzene	95-50-1	----	----	50 ppm	----
p-Dichlorobenzene	106-46-7	75 ppm	110 ppm	----	----
3, 3'-Dichlorobenzidine (((~~(see WAC 296-62-073)~~)))	91-94-1	----	----	----	----
Dichlorodiphenyltri-chloroethane (DDT)	50-29-3	1 mg/m^3	3 mg/m^3	----	X
Dichlorodifluoromethane	75-71-8	1,000 ppm	1,250 ppm	----	----
1, 3-Dichloro-5, 5-dimethyl hydantoin	118-52-5	0.2 mg/m^3	0.4 mg/m^3	----	----
1, 1-Dichloroethane (Ethylidine chloride)	75-34-3	100 ppm	150 ppm	----	----
1, 2-Dichloroethane (Ethylene dichloride)	107-06-2	1 ppm	2 ppm	----	----
1, 1-Dichloroethylene (Vinylidene chloride)	75-35-4	1 ppm	3 ppm	----	----

1, 2-Dichloroethylene (Acetylene dichloride)	540-59-0	200 ppm	250 ppm	----	----
Dichloroethyl ether	111-44-4	5 ppm	10 ppm	----	X
Dichlorofluoromethane	75-43-4	10 ppm	20 ppm	----	----
Dichloromethane (Methylene chloride) (((~~See WAC 296-62-07470~~)))	75-09-2	25 ppm	125 ppm	----	----
1, 1-Dichloro-1-nitroethane	594-72-9	2 ppm	10 ppm	----	----
Dichlorophenoxyacetic acid (2, 4-D)	94-75-7	10 mg/m^3	20 mg/m^3	----	----
1, 2-Dichloropropane (Propylene dichloride)	78-87-5	75 ppm	110 ppm	----	----
Dichloropropene	542-75-6	1 ppm	3 ppm	----	X
2, 2-Dichloropropionic acid	75-99-0	1 ppm	3 ppm	----	----
Dichlorotetrafluoroethane	76-14-2	1,000 ppm	1,250 ppm	----	----
Dichlorvos (DDVP)	62-73-7	0.1 ppm	0.3 ppm	----	X
Dicrotophos	141-66-2	0.25 mg/m^3	0.75 mg/m^3	----	X
Dicyclopentadiene	77-73-6	5 ppm	10 ppm	----	----
Dicyclopentadienyl iron	102-54-5	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Dieldrin	60-57-1	0.25 mg/m^3	0.75 mg/m^3	----	X
Diethanolamine	111-42-2	3 ppm	6 ppm	----	----
Diethylamine	109-89-7	10 ppm	25 ppm	----	----
2-Diethylaminoethanol	100-37-8	10 ppm	20 ppm	----	X
Diethylene triamine	111-40-0	1 ppm	3 ppm	----	X
Diethyl ether (Ethyl ether)	60-29-7	400 ppm	500 ppm	----	----
Diethyl ketone	96-22-0	200 ppm	250 ppm	----	----
Diethyl phthalate	84-66-2	5 mg/m^3	10 mg/m^3	----	----
Difluorodibromomethane	75-61-6	100 ppm	150 ppm	----	----
Difolatan (Captafol)	2425-06-1	0.1 mg/m^3	0.3 mg/m^3	----	X
Diglycidyl ether (DGE)	2238-07-5	0.1 ppm	0.3 ppm	----	----
Dihydroxybenzene (Hydroquinone)	123-31-9	2 mg/m^3	4 mg/m^3	----	----
Diisobutyl ketone (2, 6-Dimethylheptanone)	108-83-8	25 ppm	38 ppm	----	----
Diisopropylamine	108-18-9	5 ppm	10 ppm	----	X
Dimethoxymethane (Methylal)	109-87-5	1,000 ppm	1,250 ppm	----	----
Dimethyl acetamide	127-19-5	10 ppm	20 ppm	----	X

Dimethylamine	124-40-3	10 ppm	20 ppm	----	----
4-Dimethylaminoazo benzene (((~~(see WAC 296-62-073)~~)))	60-11-7	----	----	----	----
Dimethylaminobenzene (Xylidene)	1300-73-8	2 ppm	4 ppm	----	X
Dimethylaniline (N, N-Dimethylaniline)	121-69-7	5 ppm	10 ppm	----	X
Dimethylbenzene (Xylene)	1300-73-8	100 ppm	150 ppm	----	----
Dimethyl-1, 2-dibromo-2, 2-dichloroethyl phosphate (Naled)	300-76-5	3 mg/m^3	6 mg/m^3	----	X
Dimethylformamide	68-12-2	10 ppm	20 ppm	----	X
2, 6-Dimethylheptanone (Diisobutyl ketone)	108-83-8	25 ppm	38 ppm	----	----
1, 1-Dimethylhydrazine	57-14-7	0.5 ppm	1.5 ppm	----	X
Dimethyl phthalate	131-11-3	5 mg/m^3	10 mg/m^3	----	----
Dimethyl sulfate	77-78-1	0.1 ppm	0.3 ppm	----	X
Dinitolmide (3, 5-Dinitro-o-toluamide)	148-01-6	5 mg/m^3	10 mg/m^3	----	----
Dinitrobenzene (all isomers - alpha, meta and para)	528-29-0; 99-65-0; 100-25-4	0.15 ppm	0.45 ppm	----	X
Dinitro-o-cresol	534-52-1	0.2 mg/m^3	0.6 mg/m^3	----	X
3, 5-Dinitro-o-toluamide (Dinitolmide)	148-01-6	5 mg/m^3	10 mg/m^3	----	----
Dinitrotoluene	25321-14-6	1.5 mg/m^3	3 mg/m^3	----	X
Dioxane (Diethylene dioxide)	123-91-1	25 ppm	38 ppm	----	X
Dioxathion	78-34-2	0.2 mg/m^3	0.6 mg/m^3	----	X
Diphenyl (Biphenyl)	92-52-4	0.2 ppm	0.6 ppm	----	----
Diphenylamine	122-39-4	10 mg/m^3	20 mg/m^3	----	----
Diphenylmethane diisocyanate (Methylene bisphenyl isocyanate (MDI))	101-68-8	----	----	0.02 ppm	----
Dipropylene glycol methyl ether	34590-94-8	100 ppm	150 ppm	----	X
Dipropyl ketone	123-19-3	50 ppm	75 ppm	----	----
Diquat	85-00-7	0.5 mg/m^3	1.5 mg/m^3	----	----
Di-sec, Octyl phthalate (Di-2-ethylhexylphthalate)	117-81-7	5 mg/m^3	10 mg/m^3	----	----
Disulfram	97-77-8	2 mg/m^3	4 mg/m^3	----	----
Disulfoton	298-04-4	0.1 mg/m^3	0.3 mg/m^3	----	X
2, 6-Di-tert-butyl-p-cresol	128-37-0	10 mg/m^3	20 mg/m^3	----	----
Diuron	330-54-1	10 mg/m^3	20 mg/m^3	----	----
Divinyl benzene	1321-74-0	10 ppm	20 ppm	----	----
Emery	12415-34-8	----	----	----	----

Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Endosulfan (Thiodan)	115-29-7	0.1 mg/m^3	0.3 mg/m^3	----	X
Endrin	72-20-8	0.1 mg/m^3	0.3 mg/m^3	----	X
Epichlorhydrin (1-Chloro-2, 3-epoxypropane)	106-89-8	2 ppm	4 ppm	----	X
EPN	2104-64-5	0.5 mg/m^3	1.5 mg/m^3	----	X
1, 2-Epoxypropane (Propylene oxide)	75-56-9	20 ppm	30 ppm	----	----
2, 3-Epoxy-1-propanol (Glycidol)	556-52-5	25 ppm	38 ppm	----	----
Ethane	----	Simple asphyxiant	----	----	----
Ethanethiol (Ethyl mercaptan)	75-08-1	0.5 ppm	1.5 ppm	----	----
Ethanol (Ethyl alcohol)	64-17-5	1,000 ppm	1,250 ppm	----	----
Ethanolamine (2-Aminoethanol)	141-43-5	3 ppm	6 ppm	----	----
Ethion	563-12-2	0.4 mg/m^3	1.2 mg/m^3	----	X
2-Ethoxyethanol (Glycol monoethyl ether)	110-80-5	5 ppm	10 ppm	----	X
2-Ethoxyethyl acetate (Cellosolve acetate)	111-15-9	5 ppm	10 ppm	----	X
Ethyl acetate	141-78-6	400 ppm	500 ppm	----	----
Ethyl acrylate	140-88-5	5 ppm	25 ppm	----	X
Ethyl alcohol (ethanol)	64-17-5	1,000 ppm	1,250 ppm	----	----
Ethylamine	75-04-07	10 ppm	20 ppm	----	----
Ethyl amyl ketone (5-Methyl-3-hepatone)	541-85-5	25 ppm	38 ppm	----	----
Ethyl benzene	100-41-4	100 ppm	125 ppm	----	----
Ethyl bromide	74-96-4	200 ppm	250 ppm	----	----
Ethyl butyl ketone (3-Heptanone)	106-35-4	50 ppm	75 ppm	----	----
Ethyl chloride	75-00-3	1,000 ppm	1,250 ppm	----	----
Ethylene	74-85-1	Simple asphyxiant	----	----	----
Ethylene chlorohydrin (2-Chloroethanol)	107-07-3	----	----	1 ppm	X
Ethylenediamine (1,2-Diaminoethane)	107-15-3	10 ppm	20 ppm	----	X
Ethylene dibromide	106-93-4	0.1 ppm	0.5 ppm	----	----
Ethylene dichloride (1,2-Dichloroethane)	107-06-2	1 ppm	2 ppm	----	----
Ethylene glycol	107-21-1	----	----	50 ppm	----
Ethylene glycol dinitrate	628-96-6	----	0.1 mg/m^3	----	X
Ethylene glycol monomethyl ether acetate (Methyl cellosolve acetate)	----	5 ppm	10 ppm	----	X

Ethyleneimine (((~~(see WAC 296-62-073)~~)))	151-56-4	----	----	----	X
Ethylene oxide (((~~(see WAC 296-62-07359)~~)))	75-21-8	1 ppm	5 ppm	----	----
Ethyl ether (Diethyl ether)	60-29-7	400 ppm	500 ppm	----	----
Ethyl formate	109-94-4	100 ppm	125 ppm	----	----
Ethylidine chloride (1, 1-Dichloroethane)	107-06-2	1 ppm	2 ppm	----	----
Ethylidene norbornene	16219-75-3	----	----	5.0 ppm	----
Ethyl mercaptan (Ethanethiol)	75-08-1	0.5 ppm	1.5 ppm	----	----
n-Ethylmorpholine	100-74-3	5 ppm	10 ppm	----	X
Ethyl sec-amyl ketone (5-methyl-3-heptanone)	541-85-5	25 ppm	38 ppm	----	----
Ethyl silicate	78-10-4	10 ppm	20 ppm	----	----
Fenamiphos	22224-92-6	0.1 mg/m^3	0.3 mg/m^3	----	X
Fensulfothion (Dasanit)	115-90-2	0.1 mg/m^3	0.3 mg/m^3	----	----
Fenthion	55-38-9	0.2 mg/m^3	0.6 mg/m^3	----	X
Ferbam	----	----	----	----	----
Total particulate	14484-64-1	10 mg/m^3	20 mg/m^3	----	----
Ferrovanadium dust	12604-58-9	1 mg/m^3	3 mg/m^3	----	----
Fluorides (as F)	Varies with compound	2.5 mg/m^3	5 mg/m^3	----	----
Fluorine	7782-41-4	0.1 ppm	0.3 ppm	----	----
Fluorotrichloromethane (see Trichlorofluoro methane)	75-69-4	----	----	1,000 ppm	----
Fonofos	944-22-9	0.1 mg/m^3	0.3 mg/m^3	----	X
Formaldehyde (((~~(see WAC 296-62-07540)~~)))	50-00-0	0.75 ppm	2 ppm	----	----
Formamide	75-12-7	20 ppm	30 ppm	----	----
Formic acid	64-18-6	5 ppm	10 ppm	----	----
Furadon (carbofuran)	1563-66-2	0.1 mg/m^3	0.3 mg/m^3	----	----
Furfural	98-01-1	2 ppm	4 ppm	----	X
Furfuryl alcohol	98-00-0	10 ppm	15 ppm	----	X
Gasoline	8006-61-9	300 ppm	500 ppm	----	----
Germanium tetrahydride	7782-65-2	0.2 ppm	0.6 ppm	----	----
Glass, fibrous or dust	----	10 mg/m^3	20 mg/m^3	----	----
Gluteraldehyde	111-30-8	----	----	0.2 ppm	----
Glycerin mist	56-81-5	----	----	----	----

Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Glycidol (2, 3-Epoxy-1-propanol)	556-52-5	25 ppm	38 ppm	----	----
Glycol monoethyl ether (2-Ethoxyethanol)	110-80-5	5 ppm	10 ppm	----	X
Grain dust (oat, wheat, barley)	----	10 mg/m^3	20 mg/m^3	----	----
Graphite, natural	7782-42-5	----	----	----	----
Respirable particulate	----	2.5 mg/m^3	5 mg/m^3	----	----
Graphite, synthetic	----	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Guthion (Azinphosmethyl)	86-50-0	0.2 mg/m^3	0.6 mg/m^3	----	X
Gypsum	13397-24-5	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Hafnium	7440-58-6	0.5 mg/m^3	1.5 mg/m^3	----	----
Helium	----	Simple asphyxiant	----	----	----
Heptachlor	76-44-8	0.5 mg/m^3	1.5 mg/m^3	----	X
Heptane (n-heptane)	142-82-5	400 ppm	500 ppm	----	----
2-Heptanone (Methyl n-amyl ketone)	110-43-0	50 ppm	75 ppm	----	----
3-Heptanone (Ethyl butyl ketone)	106-35-4	50 ppm	75 ppm	----	----
Hexachlorobutadiene	87-68-3	0.02 ppm	0.06 ppm	----	X
Hexachlorocyclopentadiene	77-47-4	0.01 ppm	0.03 ppm	----	----
Hexachloroethane	67-72-1	1 ppm	3 ppm	----	X
Hexachloronaphthalene	1335-87-1	0.2 mg/m^3	0.6 mg/m^3	----	X
Hexafluoroacetone	684-16-2	0.1 ppm	0.3 ppm	----	X
Hexane	----	----	----	----	----
n-hexane	110-54-3	50 ppm	75 ppm	----	----
other isomers	Varies with compound	500 ppm	1,000 ppm	----	----
2-Hexanone (Methyl-n-butyl ketone)	591-78-6	5 ppm	10 ppm	----	----
Hexone (Methyl isobutyl ketone)	108-10-1	50 ppm	75 ppm	----	----
sec-Hexyl acetate	108-84-9	50 ppm	75 ppm	----	----
Hexylene glycol	107-41-5	----	----	25 ppm	----
Hydrazine	302-01-2	0.1 ppm	0.3 ppm	----	X

Hydrogen	----	Simple asphyxiant	----	----	----
Hydrogenated terphenyls	61788-32-7	0.5 ppm	1.5 ppm	----	----
Hydrogen bromide	10035-10-6	----	----	3.0 ppm	----
Hydrogen chloride	7647-01-0	----	----	5.0 ppm	----
Hydrogen cyanide	74-90-8	----	4.7 ppm	----	X
Hydrogen fluoride	7664-39-3	----	----	3 ppm	----
Hydrogen peroxide	7722-84-1	1 ppm	3 ppm	----	----
Hydrogen selenide (as Se)	7783-07-5	0.05 ppm	0.15 ppm	----	----
Hydrogen sulfide	7783-06-4	10 ppm	15 ppm	----	----
Hydroquinone (Dihydroxybenzene)	123-31-9	2 mg/m^3	4 mg/m^3	----	----
4-Hydroxy-4-methyl-2-pentanone (Diacetone alcohol)	123-42-2	50 ppm	75 ppm	----	----
2-Hydroxypropyl acrylate	99-61-1	0.5 ppm	1.5 ppm	----	X
Indene	95-13-6	10 ppm	20 ppm	----	----
Indium and compounds (as In)	7440-74-6	0.1 mg/m^3	0.3 mg/m^3	----	----
Iodine	7553-56-2	----	----	0.1 ppm	----
Iodoform	75-47-8	0.6 ppm	1.8 ppm	----	----
Iron oxide dust and fume (as Fe)	1309-37-1	----	----	----	----
Total particulate	----	5 mg/m^3	10 mg/m^3	----	----
Iron pentacarbonyl (as Fe)	13463-40-6	0.1 ppm	0.2 ppm	----	----
Iron salts, soluble (as Fe)	Varies with compound	1 mg/m^3	3 mg/m^3	----	----
Isoamyl acetate	123-92-2	100 ppm	150 ppm	----	----
Isoamyl alcohol (primary and secondary)	123-51-3	100 ppm	125 ppm	----	----
Isobutyl acetate	110-19-0	150 ppm	188 ppm	----	----
Isobutyl alcohol	78-83-1	50 ppm	75 ppm	----	----
Isooctyl alcohol	26952-21-6	50 ppm	75 ppm	----	X
Isophorone	78-59-1	4 ppm	----	5 ppm	----
Isophorone diisocyanate	4098-71-9	0.005 ppm	0.02 ppm	----	X
Isopropoxyethanol	109-59-1	25 ppm	38 ppm	----	----
Isopropyl acetate	108-21-4	250 ppm	310 ppm	----	----
Isopropyl alcohol	67-63-0	400 ppm	500 ppm	----	----
Isopropylamine	75-31-0	5 ppm	10 ppm	----	----
N-Isopropylaniline	768-52-5	2 ppm	4 ppm	----	X
Isopropyl ether	108-20-3	250 ppm	313 ppm	----	----

Isopropyl glycidyl ether (IGE)	4016-14-2	50 ppm	75 ppm	-----	----
Kaolin	----	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Ketene	463-51-4	0.5 mg/m^3	1.5 mg/m^3	----	----
Lannate (Methomyl)	16752-77-5	2.5 mg/m^3	5 mg/m^3	----	----
Lead, inorganic (as Pb) (~~((see WAC 296-62-07521 and 296-155-176))~~)	7439-92-1	0.05 mg/m^3	----	----	----
Lead arsenate (as Pb) (~~((see WAC 296-62-07347))~~)	3687-31-8	0.05 mg/m^3	----	----	----
Lead chromate (as Pb)	7758-97-6	0.05 mg/m^3	----	----	----
Limestone	1317-65-3	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Lindane	58-89-9	0.5 mg/m^3	1.5 mg/m^3	----	X
Lithium hydride	7580-67-8	0.025 mg/m^3	0.075 mg/m^3	----	----
L.P.G. (liquified petroleum gas)	68476-85-7	1,000 ppm	1,250 ppm	----	----
Magnesite	546-93-0	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Magnesium oxide fume	1309-48-4	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Malathion	121-75-5	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	X
Maleic anhydride	108-31-6	0.25 ppm	0.75 ppm	----	----
Manganese and compounds (as Mn)	7439-96-5	----	----	5 mg/m^3	----
Manganese cyclopentadienyl tricarbonyl (as Mn)	12079-65-1	0.1 mg/m^3	0.3 mg/m^3	----	X
Manganese tetroxide and fume (as Mn)	7439-96-5	1 mg/m^3	3 mg/m^3	----	----
Marble	1317-65-3	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
MBOCA (4, 4'-Methylene bis (2-chloro-aniline)) (~~((see WAC 296-62-073))~~)	101-14-4	----	----	----	X

MDA (4, 4-Methylene dianiline) (((~~(see WAC 296-62-076)~~)))	101-77-9	0.01 ppm	0.1 ppm	----	X
MDI (Methylene bisphenyl isocyanate) (Diphenylmethane diisocyanate)	101-68-8	----	----	0.02 ppm	----
MEK (Methyl ethyl ketone) (2-Butanone)	78-93-3	200 ppm	300 ppm	----	----
MEKP (Methyl ethyl ketone peroxide)	1338-23-4	----	----	0.2 ppm	----
Mercury (as Hg)	7439-97-6	----	----	----	----
Aryl and inorganic	----	0.1 mg/m^3	0.3 mg/m^3	----	X
Organo-alkyl compounds	----	0.01 mg/m^3	0.03 mg/m^3	----	X
Vapor	----	0.05 mg/m^3	0.15 mg/m^3	----	X
Mesityl oxide	141-79-7	15 ppm	25 ppm	----	----
Methacrylic acid	79-41-4	20 ppm	30 ppm	----	X
Methane	----	Simple asphyxiant	----	----	----
Methanethiol (Methyl mercaptan)	74-93-1	0.5 ppm	1.5 ppm	----	----
Methanol (Methyl alcohol)	67-56-1	200 ppm	250 ppm	----	X
Methomyl (lannate)	16752-77-5	2.5 mg/m^3	5 mg/m^3	----	----
Methoxychlor	72-43-5	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
2-Methoxyethanol (Methyl cellosolve)	109-86-4	5 ppm	10 ppm	----	X
2-Methoxyethyl acetate (Methyl cellosolve acetate)	110-49-6	5 ppm	10 ppm	----	X
4-Methoxyphenol	150-76-5	5 mg/m^3	10 mg/m^3	----	----
Methyl acetate	79-20-9	200 ppm	250 ppm	----	----
Methyl acetylene (propyne)	74-99-7	1,000 ppm	1,250 ppm	----	----
Methyl acetylene-propadiene mixture (MAPP)	----	1,000 ppm	1,250 ppm	----	----
Methyl acrylate	96-33-3	10 ppm	20 ppm	----	X
Methylacrylonitrile	126-98-7	1 ppm	3 ppm	----	X
Methylal (Dimethoxy-methane)	109-87-5	1,000 ppm	1,250 ppm	----	----
Methyl alcohol (methanol)	67-56-1	200 ppm	250 ppm	----	X
Methylamine	74-89-5	10 ppm	20 ppm	----	----
Methyl amyl alcohol (Methyl isobutyl carbinol)	108-11-2	25 ppm	40 ppm	----	X
Methyl n-amyl ketone (2-Heptanone)	110-43-0	50 ppm	75 ppm	----	----
N-Methyl aniline (Monomethyl aniline)	100-61-8	0.5 ppm	1.5 ppm	----	X

Methyl bromide	74-83-9	5 ppm	10 ppm	----	X
Methyl-n-butyl ketone (2-Hexanone)	591-78-6	5 ppm	10 ppm	----	----
Methyl cellosolve (2-Methoxyethanol)	109-86-4	5 ppm	10 ppm	----	X
Methyl cellosolve acetate (2-Methoxyethyl acetate)	110-49-6	5 ppm	10 ppm	----	X
Methyl chloride	74-87-3	50 ppm	100 ppm	----	----
Methyl chloroform (1, 1, 1-trichlorethane)	71-55-6	350 ppm	450 ppm	----	----
Methyl chloromethyl ether (chloromethyl methyl ether) (((~~see WAC 296-62-073~~)))	107-30-2	----	----	----	----
Methyl 2-cyanoacrylate	137-05-3	2 ppm	4 ppm	----	----
Methylcyclohexane	108-87-2	400 ppm	500 ppm	----	----
Methylcyclohexanol	25639-42-3	50 ppm	75 ppm	----	----
Methylcyclohexanone	583-60-8	50 ppm	75 ppm	----	X
Methylcyclopentadienyl manganese tricarbonyl (as Mn)	12108-13-3	0.2 mg/m^3	0.6 mg/m^3	----	X
Methyl demeton	8022-00-2	0.5 mg/m^3	1.5 mg/m^3	----	X
Methylene bisphenyl isocyanate (MDI) (Diphenylmethane diisocyanate)	101-68-8	----	----	0.02 ppm	----
4, 4'-Methylene bis (2-chloro-aniline) (MBOCA) (((~~see WAC 296-62-073~~)))	101-14-4	----	----	----	X
Methylene bis (4-cyclohexylisocyanate)	5124-30-1	----	----	0.01 ppm	----
Methylene chloride (Dichloromethane) (((~~see WAC 296-62-07470~~)))	75-09-2	25 ppm	125 ppm	----	----
4, 4-Methylene dianiline (MDA) (((~~see WAC 296-62-076~~)))	101-77-9	0.01 ppm	0.1 ppm	----	X
Methyl ethyl ketone (MEK) (2-Butanone)	78-93-3	200 ppm	300 ppm	----	----
Methyl ethyl ketone peroxide (MEKP)	1338-23-4	----	----	0.2 ppm	----
Methyl formate	107-31-3	100 ppm	150 ppm	----	----
5-Methyl-3-heptanone (Ethyl amyl ketone)	541-85-5	25 ppm	38 ppm	----	----
Methyl hydrazine (Monomethyl hydrazine)	60-34-4	----	----	0.2 ppm	X
Methyl iodide	74-88-4	2 ppm	4 ppm	----	X
Methyl isoamyl ketone	110-12-3	50 ppm	75 ppm	----	----
Methyl isobutyl carbinol (Methyl amyl alcohol)	108-11-2	25 ppm	40 ppm	----	X
Methyl isobutyl ketone (Hexone)	108-10-1	50 ppm	75 ppm	----	----

Methyl isocyanate	624-83-9	0.02 ppm	0.06 ppm	----	X
Methyl isopropyl ketone	563-80-4	200 ppm	250 ppm	----	----
Methyl mercaptan (Methanethiol)	74-93-1	0.5 ppm	1.5 ppm	----	----
Methyl methacrylate	80-62-6	100 ppm	150 ppm	----	----
Methyl parathion	298-00-0	0.2 mg/m^3	0.6 mg/m^3	----	X
Methyl propyl ketone (2-Pentanone)	107-87-9	200 ppm	250 ppm	----	----
Methyl silicate	684-84-5	1 ppm	3 ppm	----	----
alpha-Methyl styrene	98-83-9	50 ppm	100 ppm	----	----
Mevinphos (Phosdrin)	7786-34-7	0.01 ppm	0.03 ppm	----	X
Metribuzin	21087-64-9	5 mg/m^3	10 mg/m^3	----	----
Mica (Silicates) Respirable fraction	12001-26-2	3 mg/m^3	6 mg/m^3	----	----
Molybdenum (as Mo)	7439-98-7	----	----	----	----
Soluble compounds	----	5 mg/m^3	10 mg/m^3	----	----
Insoluble compounds	----	10 mg/m^3	20 mg/m^3	----	----
Monochlorobenzene (Chlorobenzene)	108-90-7	75 ppm	113 ppm	----	----
Monocrotophos (Azodrin)	6923-22-4	0.25 mg/m^3	0.75 mg/m^3	----	----
Monomethyl aniline (N-Methyl aniline)	100-61-8	0.5 ppm	1.5 ppm	----	X
Monomethyl hydrazine	----	----	----	0.2 ppm	----
Morpholine	110-91-8	20 ppm	30 ppm	----	X
Naled (Dibrom)	300-76-5	3 mg/m^3	6 mg/m^3	----	X
Naphtha	8030-30-6	100 ppm	150 ppm	----	X
Naphthalene	91-20-3	10 ppm	15 ppm	----	----
alpha-Naphthylamine (((~~see WAC 296-62-073~~)))	134-32-7	----	----	----	----
beta-Naphthylamine (((~~see WAC 296-62-073~~)))	91-59-8	----	----	----	----
Neon	7440-01-9	Simple asphyxiant	----	----	----
Nickel carbonyl (as Ni)	13463-39-3	0.001 ppm	0.003 ppm	----	----
Nickel (as Ni)	7440-02-0	----	----	----	----
Metal and insoluble compounds	----	1 mg/m^3	3 mg/m^3	----	----
Soluble compounds	----	0.1 mg/m^3	0.3 mg/m^3	----	----
Nicotine	54-11-5	0.5 mg/m^3	1.5 mg/m^3	----	X
Nitrapyrin (2-Chloro-6 trichloromethyl pyridine)	1929-82-4	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----

Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Nitric acid	7697-37-2	2 ppm	4 ppm	----	----
Nitric oxide	10102-43-9	25 ppm	38 ppm	----	----
p-Nitroaniline	100-01-6	3 mg/m^3	6 mg/m^3	----	X
Nitrobenzene	98-95-3	1 ppm	3 ppm	----	X
4-Nitrobiphenyl (~~(see WAC 296-62-073)~~)	92-93-3	----	----	----	----
p-Nitrochlorobenzene	100-00-5	0.5 mg/m^3	1.5 mg/m^3	----	X
4-Nitrodiphenyl (~~(see WAC 296-62-073)~~)	----	----	----	----	----
Nitroethane	79-24-3	100 ppm	150 ppm	----	----
Nitrogen	7727-37-9	Simple asphyxiant	----	----	----
Nitrogen dioxide	10102-44-0	----	1 ppm	----	----
Nitrogen oxide (Nitrous oxide)	10024-97-2	50 ppm	75 ppm	----	----
Nitrogen trifluoride	7783-54-2	10 ppm	20 ppm	----	----
Nitroglycerin	55-63-0	----	0.1 mg/m^3	----	X
Nitromethane	75-52-5	100 ppm	150 ppm	----	----
1-Nitropropane	108-03-2	25 ppm	38 ppm	----	----
2-Nitropropane	79-46-9	10 ppm	20 ppm	----	----
N-Nitrosodimethylamine (~~(see WAC 296-62-073)~~)	62-75-9	----	----	----	----
Nitrotoluene	----	----	----	----	----
o-isomer	88-72-2	2 ppm	4 ppm	----	X
m-isomer	98-08-2	2 ppm	4 ppm	----	X
p-isomer	99-99-0	2 ppm	4 ppm	----	X
Nitrotrichloromethane (Chloropicrin)	76-06-2	0.1 ppm	0.3 ppm	----	----
Nitrous oxide (Nitrogen oxide)	10024-97-2	50 ppm	75 ppm	----	----
Nonane	111-84-2	200 ppm	250 ppm	----	----
Octachloronaphthalene	2234-13-1	0.1 mg/m^3	0.3 mg/m^3	----	X
Octane	111-65-9	300 ppm	375 ppm	----	----
Oil mist mineral (particulate)	8012-95-1	5 mg/m^3	10 mg/m^3	----	----
Osmium tetroxide (as Os)	20816-12-0	0.0002 ppm	0.0006 ppm	----	----
Oxalic acid	144-62-7	1 mg/m^3	2 mg/m^3	----	----
Oxygen difluoride	7783-41-7	----	----	0.05 ppm	----
Ozone	10028-15-6	0.1 ppm	0.3 ppm	----	----

Paper fiber (Cellulose)	9004-34-6	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Paraffin wax fume	8002-74-2	2 mg/m^3	4 mg/m^3	----	----
Paraquat	----	----	----	----	----
Respirable fraction	4685-14-7 1910-42-5 2074-50-2	0.1 mg/m^3	0.3 mg/m^3	----	X
Parathion	56-38-2	0.1 mg/m^3	0.3 mg/m^3	----	X
Particulate polycyclic aromatic hydrocarbons (benzene soluble fraction) (coal tar pitch volatiles)	65996-93-2	0.2 mg/m^3	0.6 mg/m^3	----	----
Particulates not otherwise regulated	----	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Pentaborane	19624-22-7	0.005 ppm	0.015 ppm	----	----
Pentachloronaphthalene	1321-64-8	0.5 mg/m^3	1.5 mg/m^3	----	X
Pentachlorophenol	87-86-5	0.5 mg/m^3	1.5 mg/m^3	----	X
Pentaerythritol	115-77-5	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Pentane	109-66-0	600 ppm	750 ppm	----	----
2-Pentanone (methyl propyl ketone)	107-87-9	200 ppm	250 ppm	----	----
Perchloroethylene (tetrachloroethylene)	127-18-4	25 ppm	38 ppm	----	----
Perchloromethyl mercaptan	594-42-3	0.1 ppm	0.3 ppm	----	----
Perchloryl fluoride	7616-94-6	3 ppm	6 ppm	----	----
Perlite	----	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Petroleum distillates (Naptha, rubber solvent)	----	100 ppm	150 ppm	----	----
Phenacyl chloride (a-Chloroacetophenone)	532-21-4	0.05 ppm	0.15 ppm	----	----
Phenol	108-95-2	5 ppm	10 ppm	----	X
Phenothiazine	92-84-2	5 mg/m^3	10 mg/m^3	----	X
p-Phenylene diamine	106-50-3	0.1 mg/m^3	0.3 mg/m^3	----	X

Phenyl ether (vapor)	101-84-8	1 ppm	3 ppm	----	----
Phenyl ether-diphenyl mixture (vapor)	----	1 ppm	3 ppm	----	----
Phenylethylene (Styrene)	100-42-5	50 ppm	100 ppm	----	----
Phenyl glycidyl ether (PGE)	122-60-1	1 ppm	3 ppm	----	----
Phenylhydrazine	100-63-0	5 ppm	10 ppm	----	X
Phenyl mercaptan	108-98-5	0.5 ppm	1.5 ppm	----	----
Phenylphosphine	638-21-1	----	----	0.05 ppm	----
Phorate	298-02-2	0.05 mg/m^3	0.2 mg/m^3	----	X
Phosdrin (Mevinphos)	7786-34-7	0.01 ppm	0.03 ppm	----	X
Phosgene (carbonyl chloride)	75-44-5	0.1 ppm	0.3 ppm	----	----
Phosphine	7803-51-2	0.3 ppm	1 ppm	----	----
Phosphoric acid	7664-38-2	1 mg/m^3	3 mg/m^3	----	----
Phosphorus (yellow)	7723-14-0	0.1 mg/m^3	0.3 mg/m^3	----	----
Phosphorous oxychloride	10025-87-3	0.1 ppm	0.3 ppm	----	----
Phosphorus pentachloride	10026-13-8	0.1 ppm	0.3 ppm	----	----
Phosphorus pentasulfide	1314-80-3	1 mg/m^3	3 mg/m^3	----	----
Phosphorus trichloride	12-2-19	0.2 ppm	0.5 ppm	----	----
Phthalic anhydride	85-44-9	1 ppm	3 ppm	----	----
m-Phthalodinitrile	626-17-5	5 mg/m^3	10 mg/m^3	----	----
Picloram	1918-02-1	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Picric acid (2, 4, 6-Trinitrophenol)	88-89-1	0.1 mg/m^3	0.3 mg/m^3	----	X
Pindone (2-Pivalyl-1, 3-indandione, Pival)	83-26-1	0.1 mg/m^3	0.3 mg/m^3	----	----
Piperazine dihydrochloride	142-64-3	5 mg/m^3	10 mg/m^3	----	----
Pival (Pindone)	83-26-1	0.1 mg/m^3	0.3 mg/m^3	----	----
Plaster of Paris	26499-65-0	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Platinum (as Pt)	7440-06-4	----	----	----	----
Metal	----	1 mg/m^3	3 mg/m^3	----	----
Soluble salts	----	0.002 mg/m^3	0.006 mg/m^3	----	----

Polychlorobiphenyls (Chlorodiphenyls)	----	----	----	----	----
42% Chlorine (PCB)	53469-21-9	1 mg/m^3	3 mg/m^3	----	X
54% Chlorine (PCB)	11097-69-1	0.5 mg/m^3	1.5 mg/m^3	----	X
Portland cement	65997-15-1	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Potassium hydroxide	1310-58-3	----	----	2 mg/m^3	----
Propane	74-98-6	1,000 ppm	1,250 ppm	----	----
Propargyl alcohol	107-19-7	1 ppm	3 ppm	----	X
beta-Propiolactone (((~~(see WAC 296-62-073)~~)))	57-57-8	----	----	----	----
Propionic acid	79-09-4	10 ppm	20 ppm	----	----
Propoxur (Baygon)	114-26-1	0.5 mg/m^3	1.5 mg/m^3	----	----
n-Propyl acetate	109-60-4	200 ppm	250 ppm	----	----
n-Propyl alcohol	71-23-8	200 ppm	250 ppm	----	X
n-Propyl nitrate	627-13-4	25 ppm	40 ppm	----	----
Propylene	----	Simple asphyxiant	----	----	----
Propylene dichloride (1, 2-Dichloropropane)	78-87-5	75 ppm	110 ppm	----	----
Propylene glycol dinitrate	6423-43-4	0.05 ppm	0.15 ppm	----	X
Propylene glycol monomethyl ether	107-98-2	100 ppm	150 ppm	----	----
Propylene imine	75-55-8	2 ppm	4 ppm	----	X
Propylene oxide (1,2-Epoxypropane)	75-56-9	20 ppm	30 ppm	----	----
Propyne (Methyl acetylene)	74-99-7	1,000 ppm	1,250 ppm	----	----
Pyrethrum	8003-34-7	5 mg/m^3	10 mg/m^3	----	----
Pyridine	110-86-1	5 ppm	10 ppm	----	----
Pyrocatachol (Catechol)	120-80-9	5 ppm	10 ppm	----	X
Quinone (p-Benzoquinone)	106-51-4	0.1 ppm	0.3 ppm	----	----
RDX (Cyclonite)	----	1.5 mg/m^3	3 mg/m^3	----	X
Resorcinol	108-46-3	10 ppm	20 ppm	----	----
Rhodium (as Rh)	7440-16-6	----	----	----	----
Insoluble compounds, metal fumes and dusts	----	0.1 mg/m^3	0.3 mg/m^3	----	----
Soluble compounds, salts	----	0.001 mg/m^3	0.003 mg/m^3	----	----
Ronnel	299-84-3	10 mg/m^3	20 mg/m^3	----	----

Rosin core solder, pyrolysis products (as formaldehyde)	8050-09-7	0.1 mg/m^3	0.3 mg/m^3	----	----
Rotenone	83-79-4	5 mg/m^3	10 mg/m^3	----	----
Rouge	----	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Rubber solvent (naphtha)	8030-30-6	100 ppm	150 ppm	----	----
Selenium compounds (as Se)	7782-49-2	0.2 mg/m^3	0.6 mg/m^3	----	----
Selenium hexafluoride (as Se)	7783-79-1	0.05 ppm	0.15 ppm	----	----
Sesone (Crag herbicide)	136-78-7	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Sevin (Carbaryl)	63-25-2	5 mg/m^3	10 mg/m^3	----	----
Silane (see Silicon tetrahydride)	7803-62-5	5 ppm	10 ppm	----	----
Silica, amorphous, precipitated and gel	112926-00-8	6 mg/m^3	12 mg/m^3	----	----
Silica, amorphous, diatomaceous earth, containing less than 1% crystalline silica	61790-53-2	----	----	----	----
Total particulate	----	6 mg/m^3	12 mg/m^3	----	----
Respirable fraction	----	3 mg/m^3	6 mg/m^3	----	----
Silica, crystalline cristobalite	----	----	----	----	----
Respirable fraction	14464-46-1	0.05 mg/m^3	0.15 mg/m3	----	----
Silica, crystalline quartz	----	----	----	----	----
Respirable fraction	14808-60-7	0.1 mg/m^3	0.3 mg/m^3	----	----
Silica, crystalline tripoli (as quartz)	----	----	----	----	----
Respirable fraction	1317-95-9	0.1 mg/m^3	0.3 mg/m^3	----	----
Silica, crystalline tridymite	----	----	----	----	----
Respirable fraction	15468-32-3	0.05 mg/m^3	0.15 mg/m^3	----	----
Silica, fused	----	----	----	----	----
Respirable fraction	60676-86-0	0.1 mg/m^3	0.3 mg/m^3	----	----
Silicates (less than 1% crystalline silica)	----	----	----	----	----
Mica	----	----	----	----	----
Respirable fraction	12001-26-2	3 mg/m^3	6 mg/m^3	----	----
Soapstone	----	----	----	----	----
Total particulate	----	6 mg/m^3	12 mg/m^3	----	----

Respirable fraction	----	3 mg/m^3	6 mg/m^3	----	----
Talc (containing asbestos) (~~(see WAC 296-62-07705)~~)	----	----	----	----	----
Talc (containing no asbestos)					
Respirable fraction	14807-96-6	2 mg/m^3	4 mg/m^3	----	----
Tremolite (~~(see WAC 296-62-07705)~~)	----	----	----	----	----
Silicon	7440-21-3	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Silicon carbide	409-21-2	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Silicon tetrahydride (Silane)	7803-62-5	5 ppm	10 ppm	----	----
Silver, metal dust and soluble compounds (as Ag)	7440-22-4	0.01 mg/m^3	0.03 mg/m^3	----	----
Soapstone	----	----	----	----	----
Total particulate	----	6 mg/m^3	12 mg/m^3	----	----
Respirable fraction	----	3 mg/m^3	6 mg/m^3	----	----
Sodium azide (as HN3 or NaN3)	26628-22-8	----	----	0.1 ppm	X
Sodium bisulfite	7631-90-5	5 mg/m^3	10 mg/m^3	----	----
Sodium-2, 4-dichloro-phenoxyethyl sulfate (Crag herbicide)	136-78-7	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Sodium fluoroacetate	62-74-8	0.05 mg/m^3	0.15 mg/m^3	----	X
Sodium hydroxide	1310-73-2	----	----	2 mg/m^3	----
Sodium metabisulfite	7681-57-4	5 mg/m^3	10 mg/m^3	----	----
Starch	9005-25-8	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Stibine	7803-52-3	0.1 ppm	0.3 ppm	----	----
Stoddard solvent	8052-41-3	100 ppm	150 ppm	----	----
Strychnine	57-24-9	0.15 mg/m^3	0.45 mg/m^3	----	----

Styrene (Phenylethylene, Vinyl benzene)	100-42-5	50 ppm	100 ppm	----	----
Subtilisins	9014-01-1	----	0.00006 mg/m^3 (60 min.)	----	----
Sucrose	57-50-1	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Sulfotep (TEDP)	3689-24-5	0.2 mg/m^3	0.6 mg/m^3	----	X
Sulfur dioxide	7446-09-5	2 ppm	5 ppm	----	----
Sulfur hexafluoride	2551-62-4	1,000 ppm	1,250 ppm	----	----
Sulfuric acid	7664-93-9	1 mg/m^3	3 mg/m^3	----	----
Sulfur monochloride	10025-67-9	----	----	1 ppm	----
Sulfur pentafluoride	5714-22-1	----	----	0.01 ppm	----
Sulfur tetrafluoride	7783-60-0	----	----	0.1 ppm	----
Sulfuryl fluoride	2699-79-8	5 ppm	10 ppm	----	----
Sulprofos	35400-43-2	1 mg/m^3	3 mg/m^3	----	----
Systox (Demeton)	8065-48-3	0.01 ppm	0.03 ppm	----	X
2, 4, 5-T	93-76-5	10 mg/m^3	20 mg/m^3	----	----
Talc (containing asbestos) (((~~see WAC 296-62-07705~~)))	----	----	----	----	----
Talc (containing no asbestos)	----	----	----	----	----
Respirable fraction	14807-96-6	2 mg/m^3	4 mg/m^3	----	----
Tantalum	----	----	----	----	----
Metal and oxide dusts	7440-25-7	5 mg/m^3	10 mg/m^3	----	----
TDI (Toluene-2, 4-diisocyanate)	584-84-9	0.005 ppm	0.02 ppm	----	----
TEDP (Sulfotep)	3689-24-5	0.2 mg/m^3	0.6 mg/m^3	----	X
Tellurium and compounds (as Te)	13494-80-9	0.1 mg/m^3	0.3 mg/m^3	----	----
Tellurium hexafluoride (as Te)	7783-80-4	0.02 ppm	0.06 ppm	----	----
Temephos (Abate)	3383-96-8	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
TEPP	107-49-3	0.004 ppm	0.012 ppm	----	X
Terphenyls	26140-60-3	----	----	0.5 ppm	----
1, 1, 1, 2-Tetrachloro-2, 2-difluoroethane	76-11-0	500 ppm	625 ppm	----	----

1, 1, 2, 2-Tetrachloro-1, 2-difluoroethane	76-12-0	500 ppm	625 ppm	----	----
1, 1, 2, 2-Tetrachloroethane	79-34-5	1 ppm	3 ppm	----	X
Tetrachloroethylene (Perchloroethylene)	127-18-4	25 ppm	38 ppm	----	----
Tetrachloromethane (Carbon tetrachloride)	56-23-5	2 ppm	4 ppm	----	X
Tetrachloronaphthalene	1335-88-2	2 mg/m^3	4 mg/m^3	----	X
Tetraethyl lead (as Pb)	78-00-2	0.075 mg/m^3	0.225 mg/m^3	----	X
Tetrahydrofuran	109-99-9	200 ppm	250 ppm	----	----
Tetramethyl lead (as Pb)	75-74-1	0.075 mg/m^3	0.225 mg/m^3	----	X
Tetramethyl succinonitrile	3333-52-6	0.5 ppm	1.5 ppm	----	X
Tetranitromethane	509-14-8	1 ppm	3 ppm	----	----
Tetrasodium pyrophosphate	7722-88-5	5 mg/m^3	10 mg/m^3	----	----
Tetryl (2, 4, 6-trinitrophenyl-methylnitramine)	479-45-8	1.5 mg/m^3	3 mg/m^3	----	X
Thallium (soluble compounds) (as Tl)	7440-28-0	0.1 mg/m^3	0.3 mg/m^3	----	X
4, 4-Thiobis (6-tert-butyl-m-cresol)	96-69-5	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Thiodan (Endosulfan)	115-29-7	0.1 mg/m^3	0.3 mg/m^3	----	X
Thioglycolic acid	68-11-1	1 ppm	3 ppm	-----	X
Thionyl chloride	7719-09-7	----	----	1 ppm	----
Thiram (((~~(see WAC 296-62-07519)~~)))	137-26-8	5 mg/m^3	10 mg/m^3	----	----
Tin (as Sn)	----	----	----	----	----
Inorganic compounds	7440-31-5	2 mg/m^3	4 mg/m^3	----	----
Tin (as Sn)	----	----	----	----	----
Organic compounds	7440-31-5	0.1 mg/m^3	0.3 mg/m^3	----	X
Tin oxide (as Sn)	21651-19-4	2 mg/m^3	4 mg/m^3	----	----
Titanium dioxide	13463-67-7	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
TNT (2, 4, 6-Trinitrotoluene)	118-96-7	0.5 mg/m^3	1.5 mg/m^3	----	X
Toluene	108-88-3	100 ppm	150 ppm	----	----
Toluene-2, 4-diisocyanate (TDI)	584-84-9	0.005 ppm	0.02 ppm	-----	----
m-Toluidine	108-44-1	2 ppm	4 ppm	----	X
o-Toluidine	95-53-4	2 ppm	4 ppm	----	X

p-Toluidine	106-49-0	2.0 ppm	4 ppm	----	X
Toxaphene (Chlorinated camphene)	8001-35-2	0.5 mg/m^3	1 mg/m^3	----	X
Tremolite (((~~see WAC 296-62-07705~~)))	----	----	----	----	----
Tributyl phosphate	126-73-8	0.2 ppm	0.6 ppm	----	----
Trichloroacetic acid	76-03-9	1 ppm	3 ppm	----	----
1, 2, 4-Trichlorobenzene	120-82-1	----	----	5 ppm	----
1, 1, 1-Trichloroethane (Methyl chloroform)	71-55-6	350 ppm	450 ppm	----	----
1, 1, 2-Trichloroethane	79-00-5	10 ppm	20 ppm	----	----
Trichloroethylene	79-01-6	50 ppm	200 ppm	----	----
Trichlorofluoromethane (Fluorotrichloromethane)	75-69-4	----	----	1,000 ppm	----
Trichloromethane (Chloroform)	67-66-3	2 ppm	4 ppm	----	----
Trichloronaphthalene	1321-65-9	5 mg/m^3	10 mg/m^3	----	X
1, 2, 3-Trichloropropane	96-18-4	10 ppm	20 ppm	----	X
1, 1, 2-Trichloro-1, 2, 2-trifluoroethane	76-13-1	1,000 ppm	1,250 ppm	----	----
Tricyclohexyltin hydroxide (Cyhexatin)	13121-70-5	5 mg/m^3	10 mg/m^3	----	----
Triethylamine	121-44-8	10 ppm	15 ppm	----	----
Trifluorobromomethane	75-63-8	1,000 ppm	1,250 ppm	----	----
Trimellitic anhydride	552-30-7	0.005 ppm	0.015 ppm	----	----
Trimethylamine	75-50-3	10 ppm	15 ppm	----	----
Trimethyl benzene	25551-13-7	25 ppm	38 ppm	----	----
Trimethyl phosphite	121-45-9	2 ppm	4 ppm	----	----
2, 4, 6-Trinitrophenol (Picric acid)	88-89-1	0.1 mg/m^3	0.3 mg/m^3	----	X
2, 4, 6-Trinitrophenyl-methylnitramine (Tetryl)	479-45-8	1.5 mg/m^3	3 mg/m^3	-----	X
2, 4, 6-Trinitrotoluene (TNT)	118-96-7	0.5 mg/m^3	1.5 mg/m^3	----	X
Triorthocresyl phosphate	78-30-8	0.1 mg/m^3	0.3 mg/m^3	----	X
Triphenyl amine	603-34-9	5 mg/m^3	10 mg/m^3	----	----
Triphenyl phosphate	115-86-6	3 mg/m^3	6 mg/m^3	----	----
Tungsten (as W)	7440-33-7	----	----	----	----
Soluble compounds	----	1 mg/m^3	3 mg/m^3	----	----
Insoluble compounds	----	5 mg/m^3	10 mg/m^3	----	----
Turpentine	8006-64-2	100 ppm	150 ppm	----	----
Uranium (as U)	7440-61-1	----	----	----	----

Soluble compounds	----	0.05 mg/m^3	0.15 mg/m^3	----	----
Insoluble compounds	----	0.2 mg/m^3	0.6 mg/m^3	----	----
n-Valeraldehyde	110-62-3	50 ppm	75 ppm	----	----
Vanadium (as V2O5)	----	----	----	----	----
Respirable fraction	1314-62-1	0.05 mg/m^3	0.15 mg/m^3	----	----
Vegetable oil mist	----	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Vinyl acetate	108-05-1	10 ppm	20 ppm	----	----
Vinyl benzene (Styrene)	100-42-5	50 ppm	100 ppm	----	----
Vinyl bromide	593-60-2	5 ppm	10 ppm	----	----
Vinyl chloride (Chloroethylene) (((~~see WAC 296-62-07329~~)))	75-01-4	1 ppm	5 ppm	----	----
Vinyl cyanide (Acrylonitrile) (((~~see WAC 296-62-07336~~)))	107-13-1	2 ppm	10 ppm	----	----
Vinyl cyclohexene dioxide	106-87-6	10 ppm	20 ppm	----	X
Vinyl toluene	25013-15-4	50 ppm	75 ppm	----	----
Vinylidene chloride (1, 1-Dichloroethylene)	75-35-4	1 ppm	3 ppm	----	----
VM & P Naphtha	8032-32-4	300 ppm	400 ppm	----	----
Warfarin	81-81-2	0.1 mg/m^3	0.3 mg/m^3	----	----
Welding fumes (total particulate)	----	5 mg/m^3	10 mg/m^3	----	----
Wood dust	----	----	----	----	----
Nonallergenic; (All woods except allergenics)	----	5 mg/m^3	10 mg/m^3	----	----
Allergenics (e.g. cedar, mahogany and teak)	----	2.5 mg/m^3	5 mg/m^3	----	----
Xylenes (ortho, meta, and para isomers) (Dimethylbenzene)	1330-20-7	100 ppm	150 ppm	----	----
m-Xylene alpha, alpha-diamine	1477-55-0	----	----	0.1 mg/m^3	X
Xylidine (Dimethylaminobenzene)	1300-73-8	2 ppm	4 ppm	----	X
Yttrium	7440-65-5	1 mg/m^3	3 mg/m^3	----	----
Zinc chloride fume	7646-85-7	1 mg/m^3	2 mg/m^3	----	----
Zinc chromate (as CrO3)	Varies with compound	0.05 mg/m^3	----	0.1 mg/m^3	----
Zinc oxide	1314-13-2	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----

Respirable fraction	----	5 mg/m^3	10 mg/m	----	----
Zinc oxide fume	1314-13-2	5 mg/g^3	10 mg/m^3	----	----
Zinc stearate	557-05-1	----	----	----	----
Total particulate	----	10 mg/m^3	20 mg/m^3	----	----
Respirable fraction	----	5 mg/m^3	10 mg/m^3	----	----
Zirconium compounds (as Zr)	7440-67-2	5 mg/m^3	10 mg/m^3	----	----

AMENDATORY SECTION (Amending WSR 03-01-096, filed 12/17/02, effective 6/1/03)

WAC 296-839-40005 Label containers of hazardous chemicals.

Exemption:

Containers are exempt from this section if **ALL** hazardous contents are listed in Table 11.

You must:

✎ Make sure every container of hazardous chemicals leaving the workplace is properly labeled. This includes **ALL** of the following:

– The identity of the hazardous chemical (the chemical or common name) that matches the identity used on the MSDS

– An appropriate hazard warning

– The name and address of the chemical manufacturer, importer, or other responsible party

– Make sure labeling does not conflict with the requirements of:

✂ The Hazardous Materials Transportation Act (49 U.S.C. 1801 et seq.)

AND

✂ Regulations issued under the act by the U.S. Department of Transportation (Title 49 of the Code of Federal Regulations, Parts 171 through 180). See http://www.dot.gov

– Revise labels within three months of becoming aware of new and significant information about chemical hazards

– Provide revised labels on containers beginning with the first shipment after a revision, to manufacturers, distributors or employers

– Revise the label when a chemical is not currently used, produced or imported, before:

✂ You resume shipping (or transferring) the chemical

OR

✂ The chemical is reintroduced in the workplace

– Label information

✂ Clearly written in English

AND

✂ Prominently displayed on the container

((**~~Reference:~~**

~~Additional labeling requirements for specific hazardous chemicals (for example, asbestos, cadmium, and formaldehyde) are found in chapter 296-62 WAC, General occupational health standards (see parts F, G, I and I-1 of that chapter).~~))

Note: When the conditions specified in Table 10 are met for the solid material products listed you are not required to

provide labels for every shipment.

Table 10 Labeling for Solid Materials	
You need only send labels with the first shipment, IF the product is	**And**
Whole grain	✎ It is shipped to the same customer **AND** ✎ No hazardous chemicals are part of or known to be present with the product which could expose employees during handling – For example, cutting fluids on solid metal, and pesticides with grain
Solid untreated wood	
Solid metal For example: Steel beams, metal castings	
Plastic items	

Exemptions:

THIS SECTION under the conditions specified. Requirements in other sections still apply.

Table 11 Conditional Label Exemptions	
This section does not apply to	**When the product is**
✎ Pesticides – Meeting the definition of "pesticides" in the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (see Title 7, U.S.C. Chapter 6, Subchapter II, section 136[1])	✎ Subject to – Labeling requirements of FIFRA[1] **AND** – Labeling regulations issued under FIFRA by the United States Environmental Protection Agency (EPA) (see Title 40 of the Code of Federal Regulations[2])
✎ A chemical substance or mixture – Meeting the definition of "chemical substance" or "mixture" in the Toxic Substance Control Act (TSCA) (see Title 15 U.S.C. Chapter 53, Subchapter II, Section 2602[1])	✎ Subject to – Labeling requirements of TSCA[1] **AND** – Labeling requirements issued under TSCA by the EPA (see Title 40 of the Code of Federal Regulations[2])

✎ Each of the following: – Food – Food additives – Color additives – Drugs – Cosmetics – Medical devices or products – Veterinary devices or products – Materials intended for use in these products (for example: Flavors, and fragrances) ✎ As defined in – The Federal Food, Drug, and Cosmetic Act (see Title 21 U.S.C. Chapter 9, Subchapter II, Section 321[1]) **OR** – Or the Virus-Serum Toxin Act of 1913 (see Title 21 U.S.C. Chapter 5, Section 151 et seq.[1]) **OR** – Regulations issued under these acts (see Title 21 Part 101 in the Code of Federal Regulations, and Title 9, in the Code of Federal Regulations[3])	✎ Subject to: – Labeling requirements in Federal Food, Drug, and Cosmetic Act, Virus-Serum Toxin Act of 1913, and issued regulations enforced by the United States ✂ Food and Drug Administration (see Title 21 Parts 101-180 in the Code of Federal Regulations[3]) **OR** ✂ Department of Agriculture (see Title 9, in the Code of Federal Regulations[3])
✎ Each of the following: – Distilled spirits (beverage alcohols) **AND** – Wine **AND** – Malt beverage ✎ As defined in – The Federal Alcohol Administration Act (see Title 27 U.S.C. Section 201[1]) **AND** – Regulations issued under this act (see Title 27 in the Code of Federal Regulations)[3]	✎ Subject to: – Labeling requirements of Federal Alcohol Administration Act[1] **AND** – Labeling regulations issued under Federal Alcohol Administration Act by the Bureau of Alcohol, Tobacco, and Firearms (see Title 27 in the Code of Federal Regulations[3])
✎ Consumer products **AND** ✎ Hazardous substances – As defined in ✂ The Consumer Product Safety Act (see 15 U.S.C. 2051 et seq.[1]) **AND** ✂ The Federal Hazardous Substances Act (see 15 U.S.C. 1261 et seq.[1])	✎ Subject to: – A consumer product safety or labeling requirement of the Consumer Product Safety Act or Federal Hazardous Substances Act[1] **OR** – Regulations issued under these acts by the Consumer Product Safety Commission (see Title 16 in the Code of Federal Regulations[3])
✎ Agricultural seed **AND** ✎ Vegetable seed treated with pesticides	✎ Labeled as required by – The Federal Seed Act (see Title 7 U.S.C. Chapter 37 Section 1551 et seq.[1]) **AND** – Labeling requirements issued under Federal Seed Act by the United States Department of Agriculture[1]

[1]This federal act is included in the United States Code. See http://www.access.gpo.gov/uscode/uscmain.html
[2]See http://www.epa.gov
[3]See http://www.access.gpo.gov/nara/cfr/index.html

AMENDATORY SECTION (Amending WSR 05-17-168, filed 8/23/05, effective 1/1/06)

WAC 296-841-100 Scope. This chapter applies **only** if your employees:

- Are exposed to a respiratory hazard

OR

- Could be exposed to one of the specific hazards listed below.

This chapter applies to any workplace with potential or actual employee exposure to respiratory hazards. It requires you to protect employees from respiratory hazards by applying this protection strategy:

- Evaluate employee exposures to determine if controls are needed
- Use feasible controls. For example, enclose or confine the operation, use ventilation systems, or substitute with less toxic material
- Use respirators if controls are not feasible or if they cannot completely remove the hazard.

Definition:

Exposed or exposure:

The contact an employee has with a toxic substance, harmful physical agent or oxygen deficient condition, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry, such as inhalation, ingestion, skin contact, or skin absorption.

Note:

- Examples of substances that may be respiratory hazards when airborne include:
  - Chemicals listed in Table 3
  - Any substance
  - Listed in the latest edition of the NIOSH Registry of Toxic Effects of Chemical Substances
  - For which positive evidence of an acute or chronic health hazard exists through tests conducted by, or known to, the employer
  - That may pose a hazard to human health as stated on a material safety data sheet kept by, or known to, the employer
  - Atmospheres considered oxygen deficient
  - Biological agents such as harmful bacteria, viruses or fungi
  - Examples include airborne TB aerosols and anthrax
  - Pesticides with a label requirement for respirator use
  - Chemicals used as crowd control agents such as pepper spray
  - Chemicals present at clandestine drug labs.
  - These substances can be airborne as dusts, fibers, fogs, fumes, mists, gases, smoke, sprays, vapors, or aerosols.

Reference:

- Substances in Table 3 that are marked with an X in the "skin" column may require personal protective equipment (PPE). See WAC 296-800-160, Personal protective equipment, for additional information and requirements.
- If any of the following hazards are present in your workplace, you will need both this chapter and any of the following specific rules that apply:

Hazard	((~~**Rule that applies**~~))

Acrylonitrile	((~~WAC 296-62-07336~~))
Arsenic (inorganic)	((~~WAC 296-62-07347~~))
Asbestos	((~~WAC 296-62-077~~))
Benzene	((~~Chapter 296-849 WAC~~))
Butadiene	((~~WAC 296-62-07460~~))
Cadmium	((~~WAC 296-62-074 through 296-62-07449 or 296-155-174~~))
Carcinogens	((~~Chapter 296-62 WAC, Part F~~))
Coke ovens	((~~Chapter 296-62 WAC, Part O~~))
Cotton dust	((~~Chapter 296-62 WAC, Part N~~))
1, 2-Dibromo-3-chloropropane	((~~WAC 296-62-07342~~))
Ethylene oxide	((~~Chapter 296-855 WAC~~))
Formaldehyde	((~~WAC 296-62-07540~~))
Lead	((~~WAC 296-62-07521 or 296-155-176~~))
Methylene chloride	((~~WAC 296-62-07470~~))
Methylenedianiline	((~~WAC 296-62-076 or 296-155-173~~))
Thiram	((~~WAC 296-62-07519~~))
Vinyl chloride	((~~WAC 296-62-07329~~))

Chapter 296-856 WAC

FORMALDEHYDE

NEW SECTION

WAC 296-856-100 Scope. This chapter applies to all occupational exposure to formaldehyde. Formaldehyde includes formaldehyde gas, its solutions, and materials that release formaldehyde.

Definitions:

Formaldehyde is an organic chemical with the formula of HCHO, represented by the chemical abstract service (CAS) registry number 50-00-0. Examples of primary uses of formaldehyde and its solutions are as follows:

- An intermediate in the production of:
  - Resins.
  - Industrial chemicals.
- A bactericide or fungicide.
- A preservative.
- A component in the production of end-use consumer items such as cosmetics, shampoos, and glues.

Exposure is the contact an employee has with formaldehyde, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry such as inhalation, ingestion, skin contact, or skin absorption.

Some of the requirements in this chapter may not apply to every workplace with an occupational exposure to formaldehyde. At a minimum, you need to:

- Follow requirements in the basic rules sections, WAC 296-856-20010 through 296-856-20070.
- Use employee exposure monitoring results required by Exposure evaluation, WAC 296-856-20060.
- Follow Table 1 to find out which additional sections of this chapter apply to your workplace.

Table 1
Sections That Apply To Your Workplace

If	Then continue to follow the basic rules, and the additional requirements in
✎ Employee exposure monitoring results are above the 8-hour time weighted average (TWA_8) or short-term exposure limit (STEL)	✎ Exposure and medical monitoring, WAC 296-856-30010 through 296-856-30050; **AND** ✎ Exposure control areas, WAC 296-856-40010 through 296-856-40030.
✎ Employee exposure monitoring results are: – Below the TWA_8 and STEL; **AND** – Above the action level (AL)	✎ Exposure and medical monitoring, WAC 296-856-30010 through 296-856-30050
✎ Employee exposure monitoring results are below the AL and STEL	✎ Exposure and medical monitoring, WAC 296-856-30020 through 296-856-30050

NEW SECTION

WAC 296-856-200 Basic rules.

Your responsibility:

To measure and minimize employee exposure to formaldehyde.

IMPORTANT:

✎ The requirements in basic rules apply to all employers covered by the scope of this chapter. Additional sections may apply to you. Turn to the scope and follow Table 1 in that section to determine the additional sections of this chapter that apply to you.

Section contents:

Personal protective equipment (PPE)
WAC 296-856-20030.
Employee protective measures
WAC 296-856-20040.
Exposure evaluations
WAC 296-856-20050.
Notification
WAC 296-856-20060.
Exposure records
WAC 296-856-20070.

NEW SECTION

WAC 296-856-20010 Preventive practices.

You must:

✎ Make sure containers of gasses, solutions, or materials composed of greater than 0.1 percent formaldehyde, **and** capable of releasing formaldehyde at concentrations greater than 0.1 ppm to 0.5 ppm, are properly labeled, tagged, or marked with all of the following:

– That the product contains formaldehyde.

– The name and address of the responsible party (for example manufacturer, importer, or employer).

– A statement that the physical and health hazard information can be obtained from you, and from the material safety data sheet (MSDS).

✎ Label, tag, or mark containers and materials capable of releasing formaldehyde at levels above 0.5 ppm as follows:

– Include the words on the label "Potential Cancer Hazard."

– Follow the requirements for labels found in the following separate chapters:

✂ The safety and health core rules, employer chemical hazard communications, WAC 296-800-170.

✂ Material safety data sheet and label preparation, chapter 296-839 WAC.

You must:

✎ Make sure you have a housekeeping and maintenance program to detect leaks and spills by doing at least the following:

– Regular visual inspections.

– Preventive maintenance of equipment, that includes surveys for leaks, at regular intervals.

– In areas where spills could occur, make resources available to contain the spills, decontaminate the area affected, and dispose of waste.

– Promptly repair leaks and clean up spills.

– Train employees who will clean spills and repair leaks, about the methods for cleanup and decontamination.

– Make sure employees who will clean up spills and repair leaks, have the appropriate personal protective equipment and respirators.

– Dispose of waste from spills or leaks in sealed containers marked with information that states the contents contain formaldehyde and the hazards associated with formaldehyde exposure.

– Develop and implement appropriate procedures to minimize injury and loss of life if there is a possibility of an emergency, such as an uncontrolled release of formaldehyde.

Note: Following the requirements of a separate chapter, Emergency response, chapter 296-824 WAC, will meet the requirements for emergency procedures.

✎ Provide emergency washing facilities, for formaldehyde exposures, as required by a separate chapter, the safety and health core rules, First aid, WAC 296-800-150, as follows:

– Emergency showers in the immediate work areas where skin contact to solutions of 1 percent or greater of formaldehyde could occur.

– Emergency eye wash in the immediate work area where an eye contact to solutions of 0.1 percent or greater of formaldehyde could occur.

NEW SECTION

WAC 296-856-20020 Training.

Exemption: Training is not required for employees when you have conclusive documentation that they cannot be exposed to formaldehyde at airborne concentrations above 0.1 parts per million (ppm).

You must:

✎ Provide training and information to employees exposed to formaldehyde at all of the following times:

– At the time of initial assignment to a work area where there is formaldehyde exposure.

– Whenever there is a new exposure to formaldehyde in their work area.

– At least every twelve months after initial training.

✎ Make sure training includes at least the following:

– The contents of this chapter and MSDS for formaldehyde.

– The purpose of medical evaluations and a description of how you are fulfilling the medical evaluation requirements of this chapter.

– The health hazards and signs and symptoms associated with formaldehyde exposure, including:

✂ Cancer hazard.

✂ Skin and respiratory system irritant and sensitizer.

✂ Eye and throat irritation.

✂ Acute toxicity.

– How employees will immediately report any signs or symptoms suspected to be from formaldehyde exposure.

– Descriptions of operations where formaldehyde is present.

– Explanations of safe work practices to limit employee exposure to formaldehyde for each job.

– The purpose, proper use, and limitations of personal protective clothing.

– Instructions for the handling of spills, emergencies, and clean-up procedures.

– An explanation of the importance of exposure controls, and instructions in the use of them.

– A review of emergency procedures, including the specific duties or assignments of each employee in the event of an emergency.

– The purpose, proper use, limitations, and other training requirements for respiratory protection, as required by a separate chapter, Respirators, chapter 296-842 WAC.

✎ Make sure any written training materials are readily available to your employees at no cost.

NEW SECTION

WAC 296-856-20030 Personal protective equipment (PPE).

You must:

✎ Provide PPE at no cost to employees and make sure employees wear the equipment.

✎ Make sure that employees do not take contaminated clothing or other PPE from the workplace.

Select PPE that is appropriate for your workplace based on at least the following:

– The form of formaldehyde, such as gas, solution, or material.

– The conditions of use.

– The hazard to be prevented.

✎ Provide full body protection for entry into areas where formaldehyde exposure could exceed 100 parts per million (ppm) or when airborne concentrations are unknown.

✎ Protect employees from all contact with liquids containing one percent or more of formaldehyde by providing chemical protective clothing that is impervious to formaldehyde and other personal protective equipment, such as goggles and face shields, as appropriate for the operation.

✎ Make sure when face shields are worn, employees also wear

chemical safety goggles if there could be eye contact with formaldehyde.

✎ Make sure contaminated clothing and other PPE is cleaned or laundered before it is used again.

✎ Repair or replace clothing and other PPE as needed to maintain effectiveness.

✎ Make sure storage areas for ventilating contaminated clothing and PPE are established to minimize employee exposure to formaldehyde.

– Make sure storage areas and containers for contaminated clothing and PPE have labels or signs with the following warning:

DANGER
Formaldehyde-contaminated (clothing) or equipment
Avoid inhalation and skin contact

You must:

✎ Make sure that only employees trained to recognize the hazards of formaldehyde remove personal protective equipment (PPE) and clothing from storage areas for the purposes of disposal, cleaning, or laundering.

✎ Inform any person who launders, cleans, or repairs contaminated clothing or other PPE, of the hazards of formaldehyde and procedures to safely handle the clothing and equipment.

✎ Provide change rooms for employees who are required to change from work clothes into protective clothing to protect them from skin contact with formaldehyde.

– Make sure change rooms have separate storage facilities for street clothes and protective clothing.

NEW SECTION

WAC 296-856-20040 Employee protective measures.

You must:

✎ Implement appropriate protective measures while you conduct your exposure evaluation.

– Employees performing activities with exposure to airborne formaldehyde that could exceed the 0.75 ppm, 8-hour time weighted average (TWA_8), or the 2 ppm 15-minute short-term exposure limit (STEL), need to follow the requirements in WAC 296-856-30010 through 296-856-40030 of this chapter.

Reference: For respirator requirements, turn to Respirators, WAC 296-856-40060.

NEW SECTION

WAC 296-856-20050 Exposure evaluations.

IMPORTANT:

✎ This section applies when there is a potential for an employee to be exposed to airborne formaldehyde in your workplace.

✎ When you conduct an exposure evaluation in a workplace where an employee uses a respirator, the protection provided by the respirator is not considered.

✎ Following this section will fulfill the requirements to identify and evaluate respiratory hazards found in a separate chapter, Respiratory hazards, chapter 296-841 WAC.

You must:

✎ Conduct an employee exposure evaluation to accurately determine airborne concentrations of formaldehyde by completing Steps 1 through 7 of the exposure evaluation process, each time any of the following apply:

– No evaluation has been conducted.

– Changes have occurred in any of the following areas that may result in new or increased employee exposures:

✂ Production.

✂ Processes.

✂ Exposure controls, such as ventilation systems or work practices.

✂ Personnel.

✂ Equipment.

– You have any reason to suspect new or increased employee exposure may occur.

– You receive a report of employee developing signs and symptoms associated with formaldehyde exposure.

You must:

✎ Provide affected employees or their designated representatives an opportunity to observe exposure monitoring required by this chapter.

✎ Make sure observers entering areas with formaldehyde exposure:

– Are provided with and use the same protective clothing, respirators, and other personal protective equipment (PPE) that employees working in the area are required to use;

AND

– Follow any safety and health requirements that apply.

Exposure evaluation process:

Exemption: ✎ Exposure monitoring is not necessary if you have documentation conclusively demonstrating that employee exposure

for a particular material and the operation where it is used, cannot exceed the action level (AL) or short-term exposure limit (STEL) during any conditions reasonably anticipated.

✎ Such documentation can be based on observations, data, calculations, and previous air monitoring results. Previous air monitoring results:

– Must meet the accuracy required by Step 5.

– Must be based on data that represents conditions being evaluated in your workplace.

– May be from outside sources, such as industry or labor studies.

Step 1: Identify all employees who have potential exposure to airborne formaldehyde in your workplace.

Step 2: Identify operations where employee exposures could exceed the 15-minute short-term exposure limit (STEL) for formaldehyde of 2 parts per million (ppm).

Note: You may use monitoring devices such as colorimetric indicator tubes or real-time monitors to screen for activities where employee exposures could exceed the STEL.

Step 3: Select employees from those working in the operations you identified in Step 2 who will have their 15-minute exposures monitored.

Step 4: Select employees from those identified in Step 1 who will have their 8-hour exposures monitored.

– Make sure the exposures of the employees selected represent 8-hour exposures for all employees identified in Step 1, including each job activity, work area, and shift.

✂ If you expect exposures to be **below** the action level (AL), you may limit your selection to those employees reasonably believed to have the highest exposures.

✂ If you find any of those employees' exposure to be **above** the AL, then you need to repeat monitoring to include each job activity, work area, and shift.

Reference: A written description of the procedure used for obtaining representative employee exposure monitoring results needs to be kept as part of your exposure records, as required by Exposure records, WAC 296-856-20070.

– This description can be created while completing Steps 3 through 6 of this exposure evaluation process.

Step 5: Determine how you will obtain accurate employee exposure monitoring results. Select and use an air monitoring method with a confidence level of 95 percent, that is accurate to:

– ±25 percent when concentrations are potentially above the TWA of 0.75 parts per million (ppm).

– ±25 percent when concentrations are potentially above the STEL of 2 ppm.

– ±35 percent when concentrations are potentially above the AL.

Note: ✎ Here are examples of air monitoring methods that meet this accuracy requirement:

– OSHA Method 52 found at http://www.osha.gov/dts/sltc/methods/toc.html.

– NIOSH methods: 2016, 2514, 3500, 2539, and 5700, found at http://www.cdc.gov/niosh/homepage.html and linking to the NIOSH Manual of Analytical Methods.

– Direct reading methods found at http://www.osha.gov/SLTC/formaldehyde/index.html

Step 6: Obtain employee exposure monitoring results by collecting air samples to accurately determine the formaldehyde exposure of employees identified in Steps 3 and 4.

– Make sure samples are collected from each selected employee's breathing zone.

Note: ✎ You may use any sampling method that meets the accuracy specified in Step 5. Examples of these methods include:

– Real-time monitors that provide immediate exposure monitoring results.

– Equipment that collects samples that are sent to a laboratory for analysis.
✎ The following are examples of methods for collecting samples representative of 8-hour exposures.
– Collect one or more continuous samples, such as a single 8-hour sample or four 2-hour samples.
– Take a minimum of 5 brief samples, such as five 15-minute samples, during the work shift at randomly selected times.
✎ For work shifts longer than 8 hours, monitor the continuous 8-hour portion of the shift expected to have the highest average exposure concentration.

Step 7: Have the samples you collected analyzed to obtain employee exposure monitoring results for 8-hour and short-term exposure limits (STEL) exposures.

– Determine if employee exposure monitoring results are above or below the following values:

✂ 8-hour action level (AL) of 0.5 ppm.

✂ 8-hour time-weighted average (TWA_8) of 0.75 ppm.

✂ 15-minute short-term exposure limit (STEL) of 2 ppm.

Reference: To use the monitoring results to determine which additional chapter sections apply to employee exposure in your workplace, turn to the Scope, WAC 296-856-100, and follow Table 1 in that section.

Note: ✎ You may contact your local WISHA consultant for help with:
– Interpreting data or other information.
– Determining 8-hour employee exposure monitoring results.
✎ To contact a WISHA consultant:
– Go to the safety and health core rules, chapter 296-800 WAC;
AND
– Find the resources section, and under "other resources," find service locations for labor and industries.

NEW SECTION

WAC 296-856-20060 Notification.

You must:

✎ Provide written notification of exposure monitoring results to employees represented by your exposure evaluation, within five business days after the results become known to you.

– In addition, when employee exposure monitoring results are above the permissible exposure limits (PEL), of either the 8-hour time weighted average (TWA_8) or the 15-minute short-term exposure limit (STEL), provide written notification of both of the following within fifteen business days after the results become known to you:

✂ Corrective actions being taken and a schedule for completion.

✂ Any reason why exposures cannot be lowered to below the PEL.

Note: ✎ You can notify employees either individually or post the notifications in areas readily accessible to affected employees.
✎ Posted notification may need specific information that allows affected employees to determine which monitoring results apply to them.
✎ Notification may be:
– In any written form, such as handwritten or e-mail.
– Limited to the required information, such as exposure monitoring results.
✎ When notifying employees about corrective actions, your notification may refer them to a separate document that is available and provides the required information.

NEW SECTION

WAC 296-856-20070 Exposure records.

You must:

✎ Establish and keep complete and accurate records for all exposure monitoring conducted under this chapter. Make sure the record includes at least the following:

– The name, unique identifier, and job classification of both:

✂ The employee sampled;

AND

✂ All other employees represented by the sampled employee.

– An estimate of the exposure for each employee "represented" by this monitoring.

– A description of the methods used to obtain exposure monitoring results and evidence of the method's accuracy.

– Any environmental conditions that could affect exposure concentration measurements.

– A description of the procedure used to obtain representative employee exposure monitoring results.

– The operation being monitored.

– The date, number, duration, location, and the result of each sample taken.

– The type of protective devices worn.

✎ Maintain documentation that conclusively demonstrates that employee exposure for formaldehyde and the operation where it is used cannot exceed the action level or the 15-minute short-term exposure limit, during any reasonable anticipated conditions.

– Such documentation can be based on observations, data, calculation, and previous air monitoring results.

✎ Keep exposure monitoring records for at least thirty years.

NEW SECTION

WAC 296-856-300 Exposure and medical monitoring.

Your responsibility:

To monitor employee health and workplace exposures to formaldehyde.

Section contents:

Periodic exposure evaluations
WAC 296-856-30010.
Medical and emergency evaluations
WAC 296-856-30020.
Medical removal
WAC 296-856-30030.
Multiple LHCP review
WAC 296-856-30040.
Medical records
WAC 296-856-30050.

NEW SECTION

WAC 296-856-30010 Periodic exposure evaluations.

Exemption: Periodic employee exposure monitoring is not required if exposure monitoring results conducted to fulfill requirements in this chapter, Exposure evaluations, WAC 296-856-20050, are below both the action level (AL) and 15-minute short-term exposure limit (STEL).

You must:

✎ Obtain employee exposure monitoring results as specified in Table 2 by repeating Steps 1 and 7 of the exposure evaluation process found within this chapter, in Exposure evaluations, WAC 296-856-20050.

Note: If you document that one work shift consistently has higher exposure monitoring results than another for a particular operation, then you may limit sample collection to the work shift with higher exposures and use those results to represent all employees performing the operation on other shifts.

Table 2
Periodic Exposure Evaluation Frequencies

If employee exposure monitoring results	**Then**
Are above the action level (AL) of 0.5 ppm	Conduct additional exposure monitoring at least every six months for the employees represented by the monitoring results
Are above the short-term exposure limit (STEL) of 2 ppm	Repeat exposure monitoring at least once a year, or more often as necessary to evaluate employee exposure
Have decreased to below the AL **and** the STEL	You may **stop** periodic employee exposure monitoring for employees represented by the monitoring results.

AND The decrease is demonstrated by two consecutive exposure evaluations made at least seven days apart	Note: You need to monitor again if there is a change in any of the following that may result in new or increased employee exposures: ✎ Production ✎ Processes ✎ Exposure controls, such as ventilation systems or work practices ✎ Personnel ✎ Equipment

NEW SECTION

WAC 296-856-30020 Medical and emergency evaluations.

IMPORTANT:

✎ Medical evaluations completed to meet the respirator use requirements of this section also need to meet the requirements found in a separate chapter, Respirators, medical evaluations, WAC 296-842-140.

You must:

✎ Make medical evaluations available to current employees who:

– Are exposed to formaldehyde concentrations above the action level (AL) or short-term exposure limit (STEL).

– Are exposed to formaldehyde during an emergency situation.

– Develops signs and symptoms commonly associated with formaldehyde exposure.

✎ Make medical examinations available to current employees as deemed necessary by the LHCP after reviewing the medical disease questionnaire for employees that are presently not required to wear a respirator.

✎ Complete Steps 1 through 4 of the medical evaluation process at the following times:

– Initially, when employees are assigned to work in an area where exposure monitoring results are above the action level

(AL) or above the STEL.

– At least every twelve months from the initial medical evaluation for employees exposed to formaldehyde above the action level (AL) or the STEL.

– Whenever the employee develops signs and symptoms commonly associated with formaldehyde.

Note: Signs and symptoms are rarely associated with formaldehyde concentrations in air less than 0.1 parts per million (ppm), and in materials at concentration levels less than 0.1 percent.

You must:

✎ Make medical evaluations available:

– At no cost to employees, including travel costs and wages associated with any time spent obtaining the medical evaluation.

– At reasonable times and places.

Note: ✎ Employees who decline to receive a medical evaluation to monitor for health effects caused by formaldehyde are not excluded from receiving a separate medical evaluation for respirator use.

✎ If employers discourage participation in medical monitoring for health effects caused by formaldehyde, or in any way interferes with an employee's decision to continue with this program, this interference may represent unlawful discrimination under RCW 49.17.160, Discrimination against employee filing complaint, instituting proceedings, or testifying prohibited--Procedure--Remedy.

Medical evaluation process:

Step 1: Select a licensed healthcare professional (LHCP) who will conduct or supervise examinations and procedures.

– If the LHCP is not a licensed physician, make sure individuals who conduct pulmonary function tests, have completed a training course in spirometry, sponsored by an appropriate governmental, academic, or professional institution.

Note: The LHCP must be a licensed physician or supervised by a physician.

Step 2: Make sure the LHCP receives all of the following information before the medical evaluation is performed:

– A copy of this chapter.

– The helpful tools: *Substance Technical Guideline for Formalin, Medical Surveillance, and Medical Disease Questionnaire*.

– A description of the duties of the employee being evaluated and how these duties relate to formaldehyde exposure.

– The anticipated or representative exposure monitoring results for the employee being evaluated.

– A description of the personal protective equipment (PPE) and respiratory protection each employee being evaluated uses or will use.

– Information in your possession from previous employment-related examinations when this information is not available to the examining LHCP.

– A description of the emergency and the exposure, when an examination is provided due to an exposure received during an emergency.

– Instructions that the written opinions the LHCP provides to you, does **not** include any diagnosis or other personal medical information, **and** is limited to the following information:

✂ The LHCP's opinion about whether or not medical conditions were found that would increase the employee's risk for impairment from exposure to formaldehyde.

✂ Any recommended limitations for formaldehyde exposure and use of respirators or other PPE.

✂ A statement that the employee has been informed of medical results and medical conditions caused by formaldehyde exposure requiring further examination or treatment.

Step 3: Make a medical evaluation available to the employee. Make sure it includes the content listed in Table 3, Content of Medical Evaluations.

Step 4: Obtain the LHCP's written opinion for the employee's medical evaluation and make sure the employee receives a copy within five business days after you receive the written opinion.

– Make sure the written opinion is limited to the information specified for written opinions in Step 2.

Note: If the written opinion contains specific findings or diagnoses unrelated to occupational exposure, send it back and obtain a revised version without the additional information.

Table 3
Content of Medical Evaluations

When conducting an	Include
Initial **OR** Annual evaluation	✎ A medical disease questionnaire that provides a work and medical history with emphasis on: – Upper or lower respiratory problems – Allergic skin conditions or dermatitis – Hyper reactive airway diseases – Eyes, nose, and throat irritation ✎ Physical examinations deemed necessary by the LHCP, that include at a minimum: – Examinations with emphasis on evidence of irritation or sensitization of skin, eyes, and respiratory systems, and shortness of breath – Counseling, provided by the LHCP to the employee as part of the medical examination if the LHCP determines that the employee has a medical condition that may be aggravated by formaldehyde exposure ✎ Pulmonary function tests for respirator users, that include at a minimum: – Forced vital capacity (FVC)

	– Forced expiratory volume in one second (FEV1) – Forced expiratory flow (FEF)
Emergency exposure evaluation	✎ A medical examination that includes a work history with emphasis on evidence of upper or lower respiratory problems, allergic conditions, skin reaction or hypersensitivity, and any evidence of eye, nose, or throat irritation ✎ Additional examinations the licensed healthcare professional (LHCP) believes appropriate, based on the employee's exposure to formaldehyde
Evaluation of reported signs and symptoms	✎ A medical disease questionnaire that provides a work and medical history with emphasis on: – Upper or lower respiratory problems – Allergic skin conditions or dermatitis – Hyper reactive airway diseases – Eyes, nose, and throat irritation ✎ A physical examination if considered necessary by the LHCP that includes at a minimum: – Examinations with emphasis on evidence of irritation or sensitization of skin, eyes, respiratory systems, and shortness of breath – Counseling if the LHCP determines that the employee has a medical condition that may be aggravated or caused by formaldehyde exposure

NEW SECTION

WAC 296-856-30030 Medical removal.

Exemption: Medical removal or restrictions do not apply when skin irritation or skin sensitization occurs from products that contain less than 0.05 percent of formaldehyde.

IMPORTANT:

✎ This section applies when an employee reports irritation of the mucosa of the eye or the upper airways, respiratory

sensitization, dermal irritation, or skin sensitization from formaldehyde exposure.

✎ When determining the content of formaldehyde in materials that employees have exposure to, you may use documentation, such as manufacturer's data, or independent laboratory analyses.

You must:

✎ Complete Steps 1 through 4 of the medical evaluation process for removal of employees, in this section, for employees that report signs and symptoms of formaldehyde exposure.

Note: When the employee is exposed to products containing less than 0.1 percent formaldehyde, the LHCP can assume, absent of contrary evidence, that employee signs and symptoms are not due to formaldehyde exposure.

Medical evaluation process for removal of employees:

Step 1: Provide the employee with a medical evaluation by an LHCP selected by the employer.

Step 2: Based on information in the medical questionnaire the LHCP will determine if the employee will receive an examination as described in Table 3, Content of Medical Evaluations, in Medical and emergency evaluations, WAC 296-856-30020.

– If the LHCP determines that a medical examination is not necessary, there will be a two-week evaluation and correction period to determine whether the employee's signs and symptoms resolve without treatment, from the use of creams, gloves, first-aid treatment, personal protective equipment, or industrial hygiene measures that reduce exposure.

✂ If before the end of the two-week period the employee's signs or symptoms worsen, immediately refer them back to the LHCP.

✂ If signs and symptoms persist after the two-week period, the LHCP will administer a physical examination as outlined in Table 3, Content of Medical Evaluations, in Medical and emergency evaluations, WAC 296-856-30020.

Step 3: Promptly follow the LHCP's restrictions or recommendations. If the LHCP recommends removal from exposure, do either of the following:

– Transfer the employee to a job currently available that:

✂ The employee qualifies for, or could be trained for, in a short period of time (up to six months);

AND

✂ Will keep the employee's exposure to as low as possible, and never above the AL of 0.5 parts per million.

– Remove the employee from the workplace until either:

✂ A job becomes available that the employee qualifies for, or could be trained for in a short period of time **and** will keep the employee's exposure to as low as possible and never above the AL;

OR

✂ The employee is returned to work or permanently removed from formaldehyde exposure, as determined by completing Steps 1

through 3 of the medical evaluation process for removal of employees, in this section.

Step 4: Make sure the employee receives a follow-up examination within six months from being removed from the formaldehyde exposure by the LHCP. At this time, the LHCP will determine if the employee can return to their original job status, or if the removal is permanent.

You must:

✎ Maintain the employee's current pay rate, seniority, and other benefits if:

– You move them to a job that they qualify for, or could be trained in a short period of time, and will keep the employee's exposure to as low as possible and never above the AL;

OR

– In the case there is no such job available, then until they are able to return to their original job status or after six months, which ever comes first.

Note: ✎ If you must provide medical removal benefits and the employee will receive compensation for lost pay from other sources, you may reduce your medical removal benefit obligation to offset the amount provided by these sources.
✎ Examples of other sources are:
– Public or employer-funded compensation programs.
– Employment by another employer, made possible by the employee's removal.

✎ Make medical evaluations available:

– At no cost to employees, including travel costs and wages associated with any time spent obtaining the medical examinations and evaluations.

– At reasonable times and places.

NEW SECTION

WAC 296-856-30040 Multiple LHCP review.

IMPORTANT:

✎ This section applies each time a medical examination or consultation is performed to determine whether medical removal or restriction is required.

You must:

✎ Promptly notify employees that they may seek a second medical opinion from an LHCP of their choice, each time a medical examination or consultation is conducted by an LHCP selected by the employer to evaluate medical removal.

– At a minimum, this notification must include the details of your multiple physician review process.

Note: Notification may be provided in writing or by verbal communication.

You must:

✎ Complete requirements in the multiple LHCP review process once you have been informed of an employee's decision to seek a second medical opinion.

✎ Pay for and complete the multiple LHCP review process for employees who:

– Inform you in writing or by verbal communication that they will seek a second medical opinion.

– Initiate steps to make an appointment with the LHCP they select. This LHCP will be referred to as the second LHCP.

– Fulfill the previous actions to inform you, and initiate steps for an appointment, within fifteen days from receiving either your notification or the initial LHCP's written opinion, whichever is received later.

Note: This process allows for selection of a second LHCP and, when disagreements between LHCPs persist, for selection of a third LHCP.

Multiple LHCP review process:

Step 1: Make sure the information required by Step 4 of the medical evaluation process is received by the second LHCP. This process is located in the section, Medical and emergency evaluations, WAC 296-856-30020.

– This requirement also applies when a third LHCP is selected.

Step 2: Allow the second LHCP to:

– Review findings, determinations, or recommendations from the original LHCP you selected;

AND

– Conduct medical examinations, consultations, and laboratory tests as necessary to complete their review.

Step 3: Obtain a written opinion from the second LHCP and make sure the employee receives a copy within five business days from the date you receive it. If findings, determinations, and recommendations in the written opinion are:

– Consistent with the written opinion from the initial LHCP, you can end the multiple physician review process. Make sure you follow the LHCP's recommendations.

– Inconsistent with the written opinion from the initial LHCP, then you and the employee must make sure efforts are made for the LHCPs to resolve any disagreements.

✂ If the LHCPs quickly resolve disagreements, you can end the multiple physician review process. Make sure you follow the LHCP's recommendations.

✂ If disagreements are not resolved within thirty business days, continue to Step 4.

Step 4: You and the employee must work through your respective LHCPs to agree on the selection of a third LHCP, or work together to designate a third LHCP to:

– Review findings, determinations, or recommendations from the initial and second LHCP;

AND

– Conduct medical examinations, consultations, and laboratory tests as necessary to resolve disagreements between the initial and second LHCP.

Step 5: Obtain a written opinion from the third LHCP and make sure the employee receives a copy within five business days from the day you receive it.

– Follow the third LHCP's recommendations, unless you and the employee agree to follow recommendations consistent with at least one of the three LHCPs.

NEW SECTION

WAC 296-856-30050 Medical records.

IMPORTANT:

✎ This section applies when a medical evaluation is performed or any time a medical record is created for an employee exposed to formaldehyde.

You must:

✎ Establish and maintain complete and accurate medical records for each employee receiving a medical evaluation for formaldehyde and make sure the records include all the following:

– The employee's name and unique identifier.

– A description of any health complaints that may be related to formaldehyde exposure.

– A copy of the licensed healthcare professional's (LHCP's) written opinions.

– Exam results.

– Medical questionnaires.

✎ Maintain medical records for the duration of employment plus thirty years.

Note: ✎ Employee medical records need to be maintained in a confidential manner. The medical provider may keep these records for you.
✎ Medical records may only be accessed with the employee's written consent.

NEW SECTION

WAC 296-856-400 Exposure control areas.

Your responsibility:

To control employee exposure to airborne formaldehyde and protect employees by using appropriate respirators.

IMPORTANT:

✎ These sections apply when employee exposure monitoring results are above the permissible exposure limit (PEL):

– The 8-hour time-weighted average (TWA_8) of 0.75 parts per

million (ppm);

OR

– The 15-minute short-term exposure limit (STEL) of two parts per million (ppm).

Section contents:

Exposure controls
WAC 296-856-40010.
Establishing exposure control areas
WAC 296-856-40020.
Respirators
WAC 296-856-40030.

NEW SECTION

WAC 296-856-40010 Exposure controls.

IMPORTANT:

✎ Respirators and other personal protective equipment (PPE) are **not** exposure controls.

You must:

✎ Use feasible exposure controls to reduce employee exposures to a level below the permissible exposure limit (PEL) or to as low a level as achievable.

NEW SECTION

WAC 296-856-40020 Establishing exposure control areas.

You must:

✎ Establish temporary or permanent exposure control areas where airborne concentrations of formaldehyde are above either the 8-hour time weighted average (TWA_8) or the 15-minute short-term exposure limit (STEL), by doing at least the following:

– Clearly identify the boundaries of exposure control areas in any way that minimizes employee access.

– Post signs at access points to exposure control areas that:

✂ Are easy to read (for example, they are kept clean and well lit);

AND

✂ Include this warning:

DANGER

Formaldehyde

Irritant and Potential Cancer Hazard

Authorized Personnel Only

Note: This requirement does not prevent you from posting other signs.

You must:

✎ Allow only employees, who have been trained to recognize the hazards of formaldehyde exposure, to enter exposure control areas.

Note: ✎ When identifying the boundaries of exposure control areas you should consider factors such as:
– The level and duration of airborne exposure.
– Whether the area is permanent or temporary.
– The number of employees in adjacent areas.
✎ You may use permanent or temporary enclosures, caution tape, ropes, painted lines on surfaces, or other materials to visibly distinguish exposure control areas or separate them from the rest of the workplace.

You must:

✎ Inform other employers at multi-employer work sites of the exposure control areas, and the restrictions that apply to those areas.

NEW SECTION

WAC 296-856-40030 Respirators.

IMPORTANT:

✎ The requirements in this section are in addition to the requirements found in the following separate chapters:

– Respiratory hazards, chapter 296-841 WAC.

– Respirators, chapter 296-842 WAC.

✎ Medical evaluations meeting all requirements of Medical and emergency evaluations, WAC 296-856-30020, will fulfill the medical evaluations requirements found in Respirators, chapter 296-842 WAC, a separate chapter.

You must:

✎ Develop a written respirator program as required by a separate chapter, Respirators, chapter 296-842 WAC, and include the following additional requirements:

– Require that employees use respirators in any of the following circumstances:

✂ Employees are in an exposure control area.

✂ Feasible exposure controls are being put in place.

✂ Where you determine that exposure controls are not feasible.

✂ Feasible exposure controls do not reduce exposures to, or below, the PEL.

✂ Employees are performing tasks presumed to have exposures above the PEL.

✂ Emergencies.

✎ Make sure all respirator use is accompanied by eye protection either through the use of full-facepiece respirators, hoods, or chemical goggles.

✎ Provide employees with powered air-purifying respirators (PAPRs) when this type of respirator will provide appropriate protection **and** any of the following applies:

– A licensed healthcare professional (LHCP) allows this type of respirator in their written opinion.

– The employee has difficulty using a negative pressure respirator.

– The employee chooses to use this type of respirator.

✎ Make sure you replace the air-purifying chemical cartridge or canister as follows:

– At the beginning of each work shift;

AND

– As required by Respirators, chapter 296-842 WAC.

NEW SECTION

WAC 296-856-500 Definitions.

Action level

An airborne concentration of formaldehyde of 0.5 parts per million of air calculated as an 8-hour time-weighted average.

Authorized personnel

Individuals specifically permitted by the employer to enter the exposure control area to perform duties, or to observe employee exposure evaluations as a designated representative.

Breathing zone

The space around and in front of an employee's nose and mouth, forming a hemisphere with a six- to nine-inch radius.

CAS (chemical abstract service) number

CAS numbers are internationally recognized and used on material safety data sheets (MSDSs) and other documents to identify substances. For more information see http://www.cas.org

Canister or cartridge (air-purifying)

Part of an air-purifying respirator that consists of a container holding materials such as fiber, treated charcoal, or a combination of the two, that removes contaminants from the air passing through the cartridge or canister.

Container

Any container, except for pipes or piping systems that contains formaldehyde. It can be any of the following:

✎ Barrel.

- Bottle.
- Can.
- Cylinder.
- Drum.
- Reaction vessel.
- Shipping containers.
- Storage tank.

Designated representative

Any one of the following:

- Any individual or organization to which an employee gives written authorization.
- A recognized or certified collective bargaining agent without regard to written employee authorization.
- The legal representative of a deceased or legally incapacitated employee.

Emergency

Any event that could or does result in the unexpected significant release of formaldehyde. Examples of emergencies include equipment failure, container rupture, or control equipment failure.

Exposure

The contact an employee has with formaldehyde, whether or not protection is provided by respirators or other personal protective equipment (PPE). Exposure can occur through various routes of entry such as inhalation, ingestion, skin contact, or skin absorption.

Formaldehyde

An organic chemical with the formula of HCHO, represented by the chemical abstract service (CAS) registry number 50-00-0. Examples of primary uses of formaldehyde and its solutions are as follows:

- An intermediate in the production of:
  - Resins.
  - Industrial chemicals.
- A bactericide or fungicide.
- A preservative.
- A component in the manufacture of end-use consumer items such as cosmetics, shampoos, and glues.

Licensed healthcare professional (LHCP)

An individual whose legally permitted scope of practice allows him or her to provide some or all of the healthcare services required for medical evaluations.

Permissible exposure limits (PELs)

PELs are employee exposures to toxic substances or harmful physical agents that must not be exceeded. PELs are also specified in WISHA rules found in other chapters. The PEL for formaldehyde is an 8-hour time-weighted average (TWA_8) of 0.75 parts per million (ppm) and a 15-minute short-term exposure

limit of 2 ppm.

Short-term exposure limit (STEL)

An exposure limit averaged over a 15-minute period that must not be exceeded during an employee's workday.

Time-weighted average (TWA_8)

An exposure limit averaged over an 8-hour period that must not be exceeded during an employee's workday.

Uncontrolled release

A release where significant safety and health risks could be created. Releases of hazardous substances that are either incidental or could not create a safety or health hazard (i.e., fire, explosion, or chemical exposure) are not considered to be uncontrolled releases.

Examples of conditions that could create a significant safety and health risk are:

- Large-quantity releases.
- Small releases that could be highly toxic.
- Potentially contaminated individuals arriving at hospitals.
- Airborne exposures that could exceed a WISHA permissible exposure limit or a published exposure limit and employees are not adequately trained or equipped to control the release.

Citation of existing rules affected by this order:

AMENDED SECTIONS:

WAC 296-62-07540, Formaldehyde

- The requirements from this section are moved to Chapter 296-856 WAC, Formaldehyde.
- A note is added to clarify that the requirements in this WAC section apply only to agriculture.

WAC 296-155-160, Gases, vapors, fumes, dusts, and mists.

- Update a reference.

WAC 296-307-56045, Label containers of hazardous chemicals

- Update a reference.

WAC 296-307-62625, Permissible exposure limits of air contaminants

- Update a reference.

WAC 296-307-624 , Scope

- Update a reference.

WAC 296-839-40005, Label containers of hazardous chemicals

- Update a reference.

WAC 296-841-100, Scope

- Update a reference.